

***Regional Phase II Workshop***  
**Washington State**  
**Long-Term Air Transportation Study (LATS)**

*Presented at:*  
**Museum of Flight (May 1st)**  
**Wenatchee Convention Center (May 2<sup>nd</sup>)**

# Regional Meeting Objectives

- Review purpose of LATS
- Provide a briefing on Phase II project efforts
- Present Phase III overview
- Obtain feedback on results and presentation materials
- Identify items for follow-up and further discussion

# Discussion Questions for Consideration

- **What are the key issues/implications for local communities, given the findings from Phases I and II?**
- **What are the implications for long-term state aviation planning?**
- **Do you have suggestions as we continue to complete the Phase II technical study?**
- **Suggestions/Feedback for Phase III Outreach?**

# Looming Challenges Require a Statewide Strategy

- **Fluctuation in fuel tax revenues and federal budgets create uncertainty for future funding.**
- **FAA forecasts predict significant increases and changes in aviation activity by 2030.**
- **Washington lacks a statewide strategy to ensure adequate aviation capacity to accommodate predicted growth.**
- **Long-range planning is needed now to support strategic investments and to protect our aviation system for the future.**

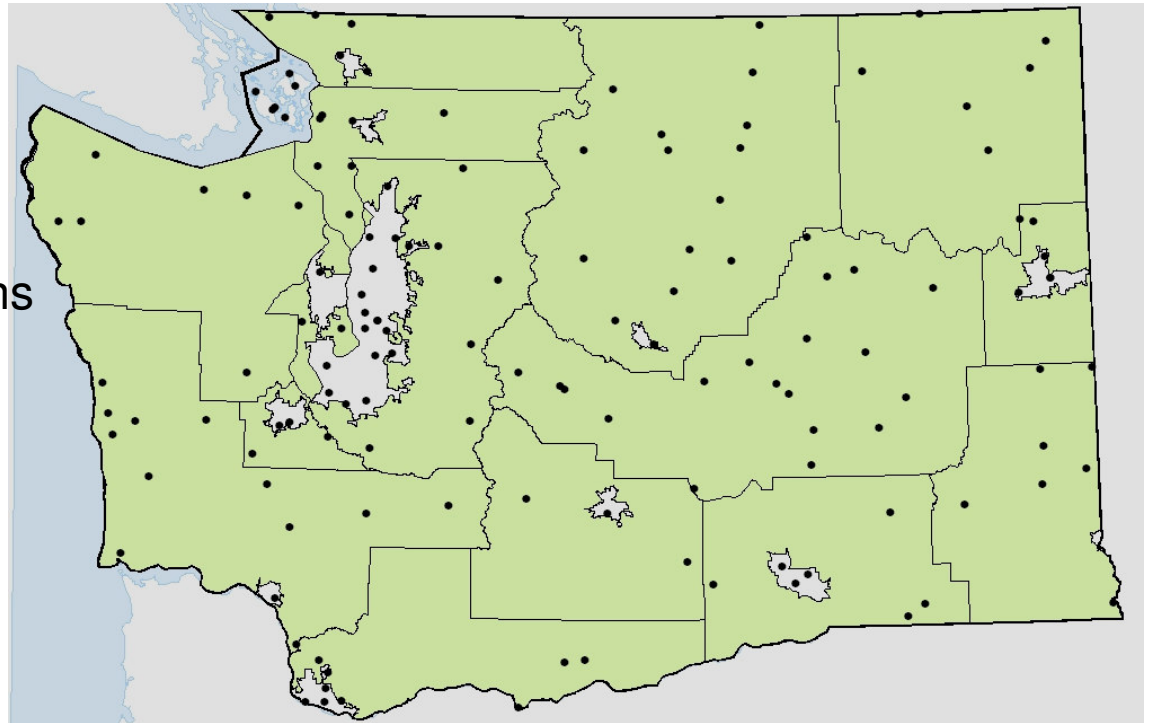
# Three Phase Approach to LATS

<b>PHASE I</b>	<b>WHAT WE HAVE.</b>	<b>Airport inventory, capacity and airspace assessment.</b>	<b>Completed September 2006.</b>
<b>PHASE II</b>	<b>WHAT WE NEED.</b>	<b>25 year activity forecast (141 airports), market analyses at commercial service airports, air cargo forecast, high speed passenger rail assessment; future capacity analysis, summarize system Requirement.</b>	<b>To be completed by July 2007.</b>
<b>PHASE III</b>	<b>HOW WE MEET THE NEEDS</b>	<b>Governor appointed planning council to provide recommendations for future airport strategy and investment statewide.</b>	<b>To be completed by July 2009.</b>

# Air Transportation in Washington State

## 140 public use airports

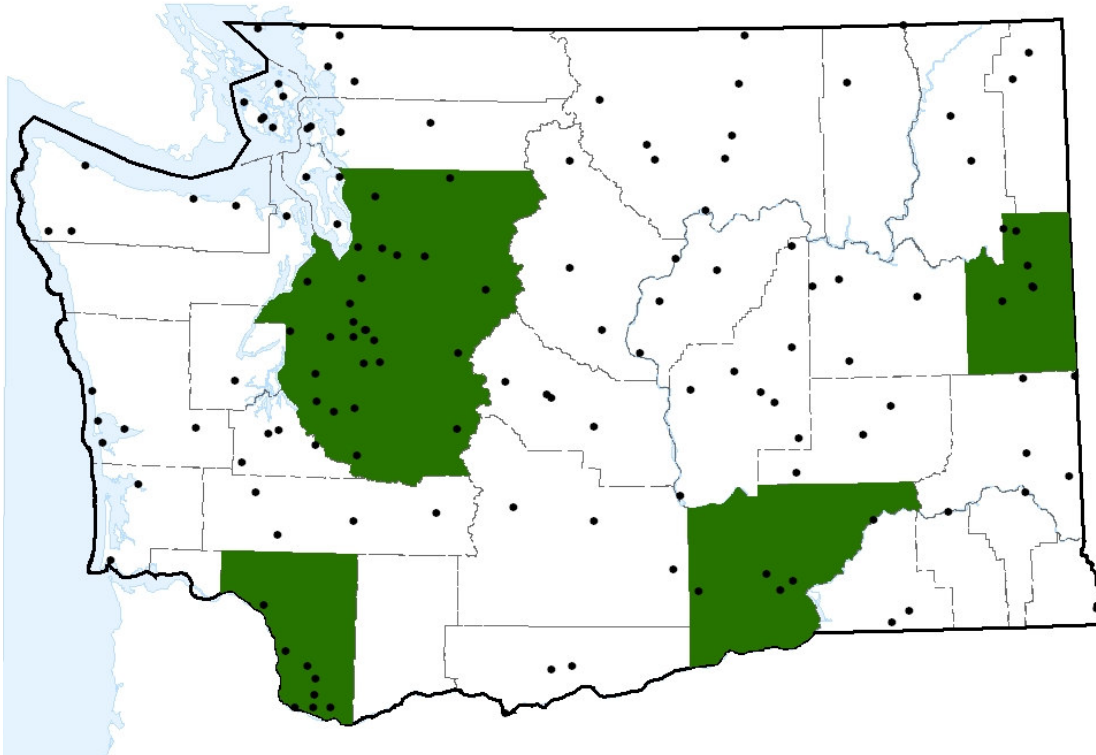
- 10 owned by counties
- 44 owned by cities and towns
- 33 owned by port districts
- 5 owned jointly
- 31 privately owned



**66 airports** included in National Plan of Integrated Airport Systems (NPIAS)

**109 airports** eligible for State Airport Aid Grant Program funding

# Special Emphasis Regions



- Puget Sound
- Southwest WA
- Spokane
- Tri-Cities

Designated by the legislature in ESSB 5121.

Focus on commercial aviation activity.

# Phase I: What Did We Learn about Existing Conditions?

Commercial Service	<b>Provide Scheduled Service</b> <b>Market-Driven Service Area</b>
Regional Service	<b>Serve a Large - Medium Market Area</b> <b>Accommodate All GA Aircraft, Facilities and Services</b>
Local Community	<b>Serve Small or Medium Size Communities</b> <b>May Include Air Cargo</b>
Recreation / Remote	<b>Serve Recreation Communities or Remote Locations.</b> <b>May Be Strategically Located for Emergency Access</b>
Seaplane Base	<b>Serve Amphibious and Float-Equipped Aircraft</b> <b>Commercial Facilities Are Not Included</b>

# Phase I: What Did We Learn about Existing Capacity?

- **Passenger Capacity**
- **Air Cargo Capacity**
- **Aircraft Storage Capacity**
- **Airport Operations Capacity**

## Phase II: What Have We Learned So Far?

- State and national trends point to significant changes and growth in aviation activity in the next 25 years, including:
  - Commercial aviation
  - General aviation
  - Air cargo activity
- Options for addressing capacity shortfalls through investment in rail transportation

# Outreach

- Aviation News Service – Subscribe: [aviation@wsdot.wa.gov](mailto:aviation@wsdot.wa.gov)
- Quarterly Newsletters
- Regional Meetings and Briefings at Statewide Aviation Association Meetings
- Stakeholder Interviews in Phase I
- Online survey – Phase I and II - Currently in Progress

***LATS Web site: [WWW.WSDOT.WA.GOV/aviation](http://WWW.WSDOT.WA.GOV/aviation)***

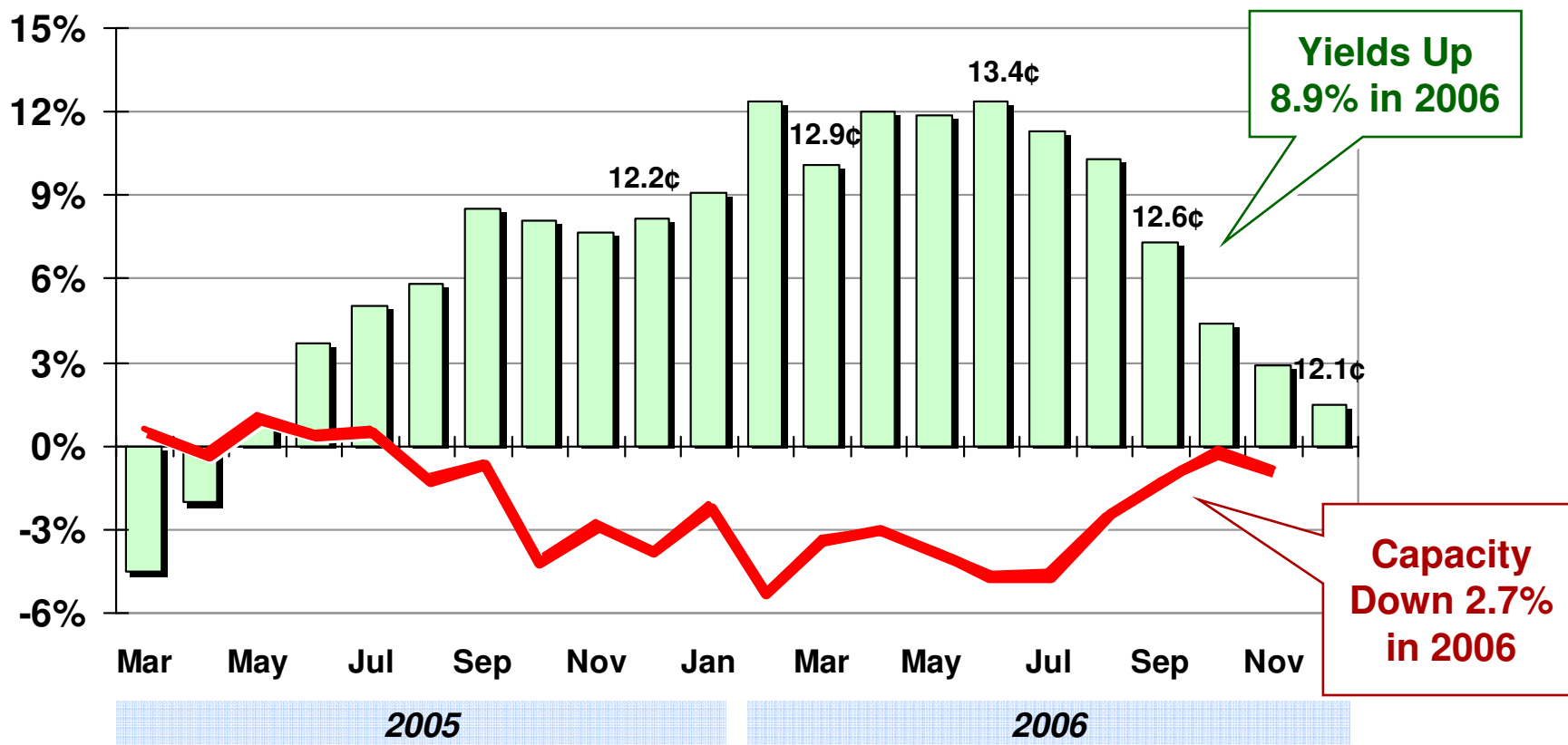


## *Regional Phase II Workshops*

# AVIATION INDUSTRY AND WASHINGTON STATE TRENDS

# The Industry Has Turned Around by Tightening Capacity and Raising Fares, Though These Are Now Leveling Off

Year-Over-Year Change in Domestic Yields and Capacity<sup>1/</sup>  
March 2005 to December 2006



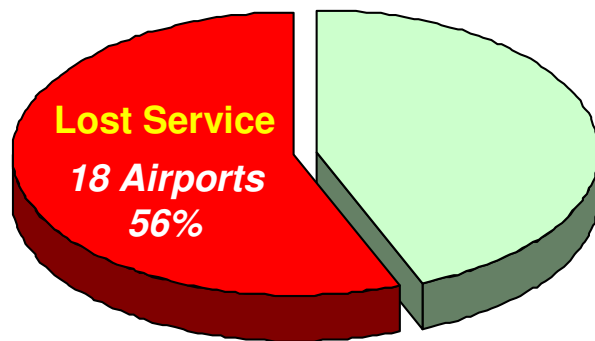
1/ Nominal yields. Includes ATA reporting carriers. Capacity in ASMs.

Source: ATA Air Transport Association

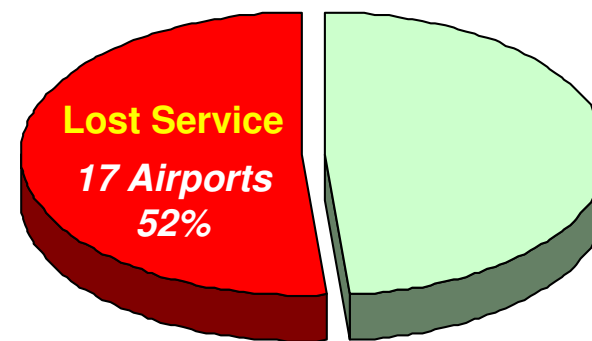
# Overall, 72% of U.S. Airports Have Lost Service Since 2000

*February 2000 vs. February 2007*

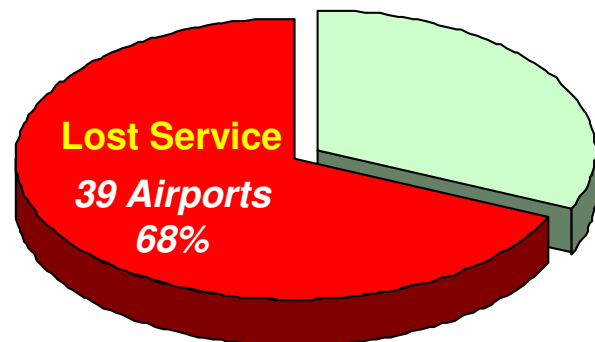
**Large Hubs**  
32 Total Airports



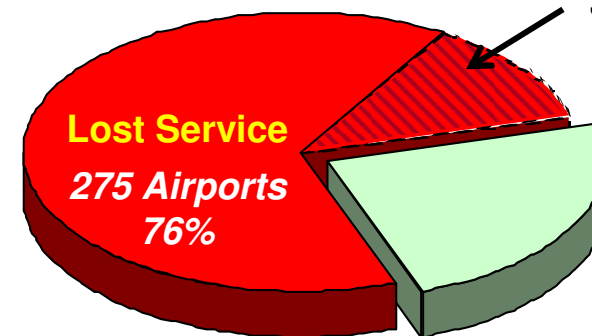
**Medium Hubs**  
33 Total Airports



**Small Hubs**  
57 Total Airports

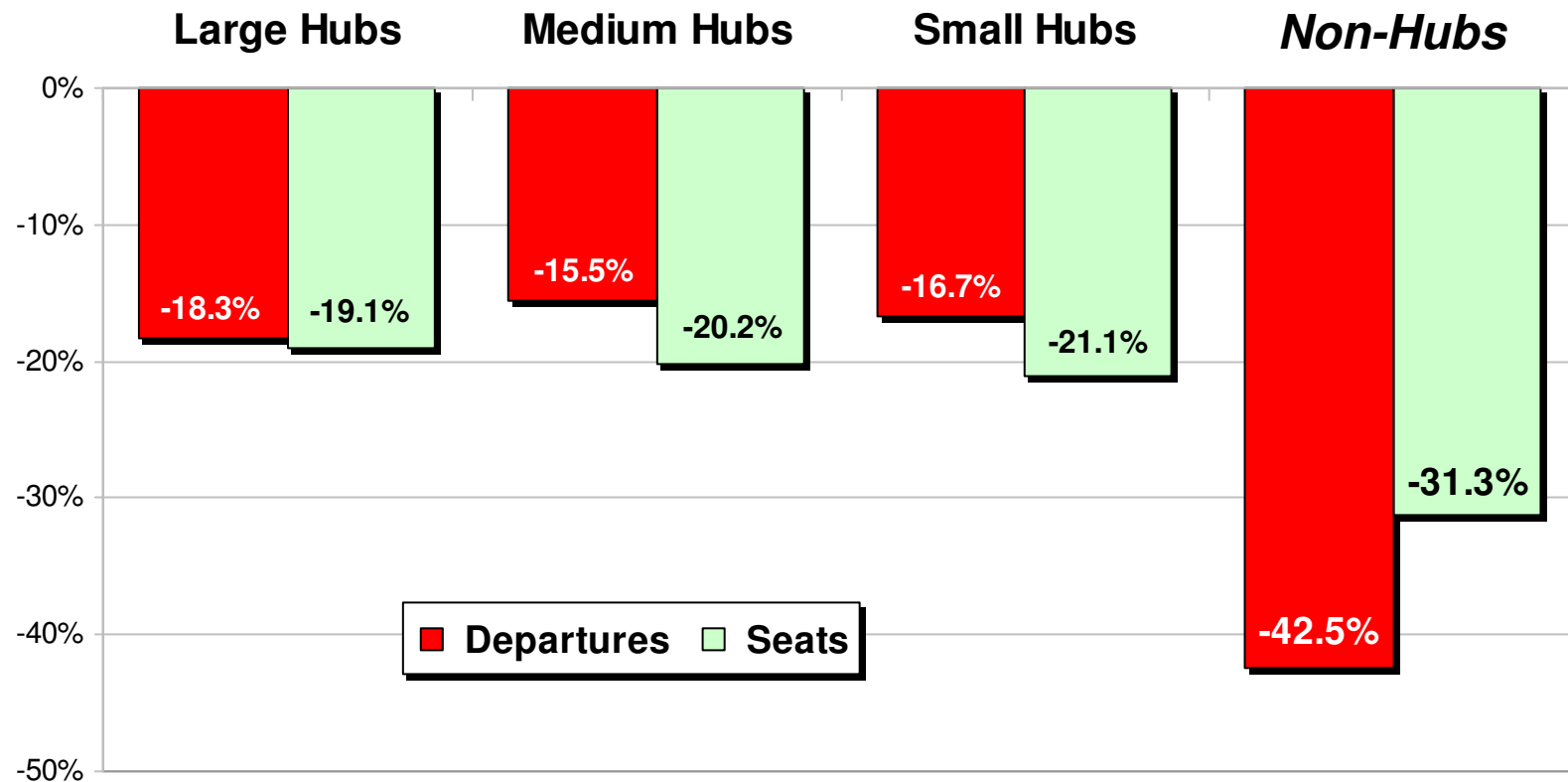


**Non-Hubs**  
360 Total Airports  
44 Non-Hub Airports Lost All Service



# Among the Airports That Have Lost Service, Non-Hubs On Average Have Been Hit the Worst

**Change in Service**  
*February 2000 vs. February 2007*

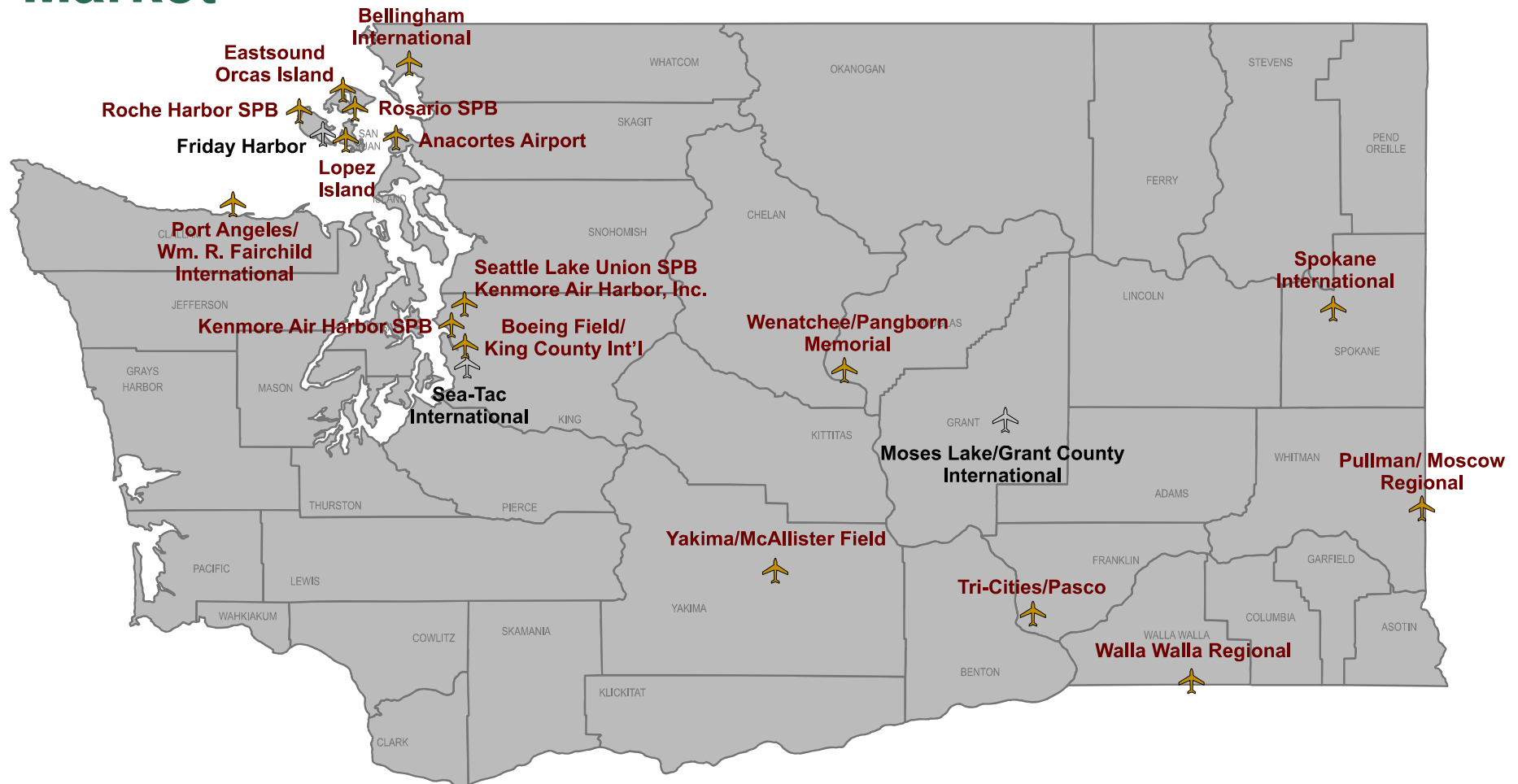




## *Regional Phase II Workshops*

# COMMERCIAL SERVICE AIRPORTS: TRAFFIC AND OPERATIONS FORECASTS

# Forecasts Were Developed at 20 Commercial Airports that also Included an Analysis of Each Market

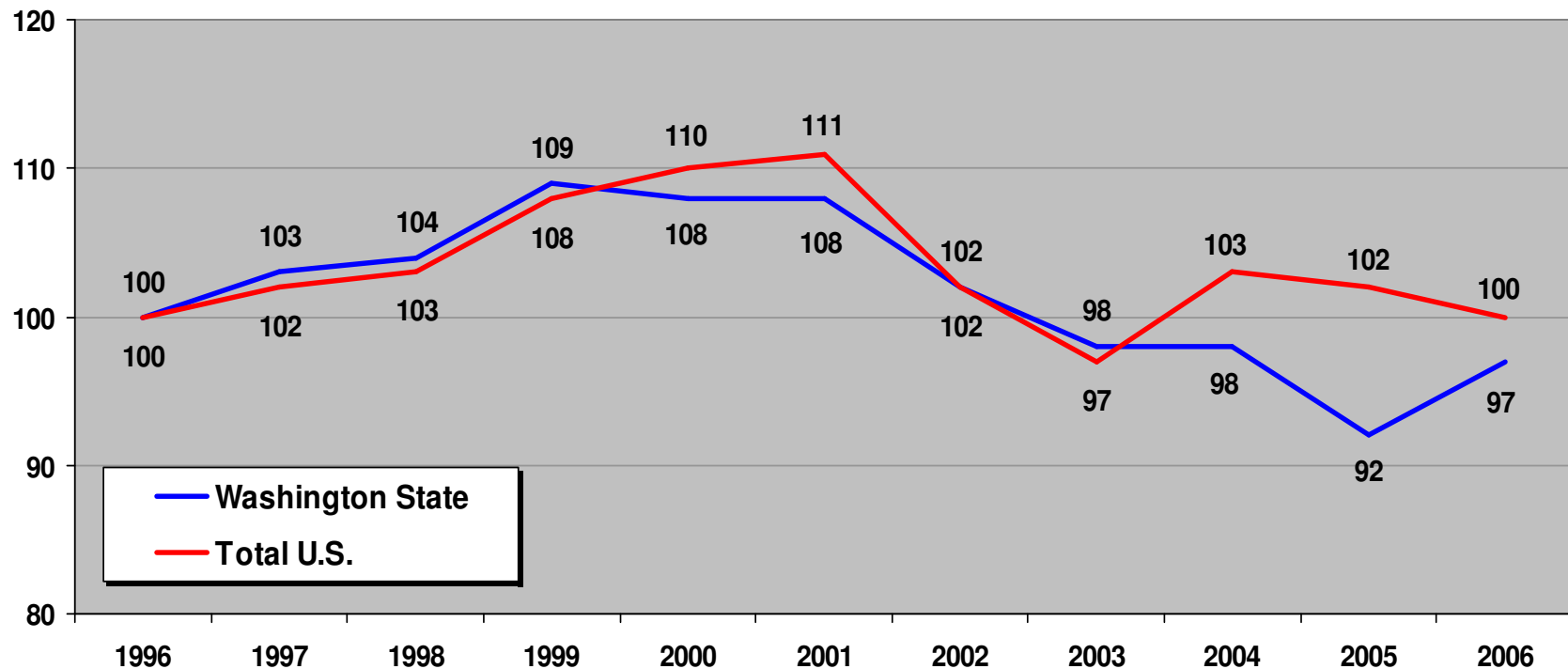


Note: Red Typeface = SH&E Forecast New, Black Typeface airports used existing forecasts extrapolated to 2030

# Growth of Scheduled Seat Capacity in Washington State Has Tracked Closely With Total U.S. Growth Over the Past 10 Years

*However, Washington Capacity Growth Has Slightly Lagged the Total U.S. in the Last 3 Years*

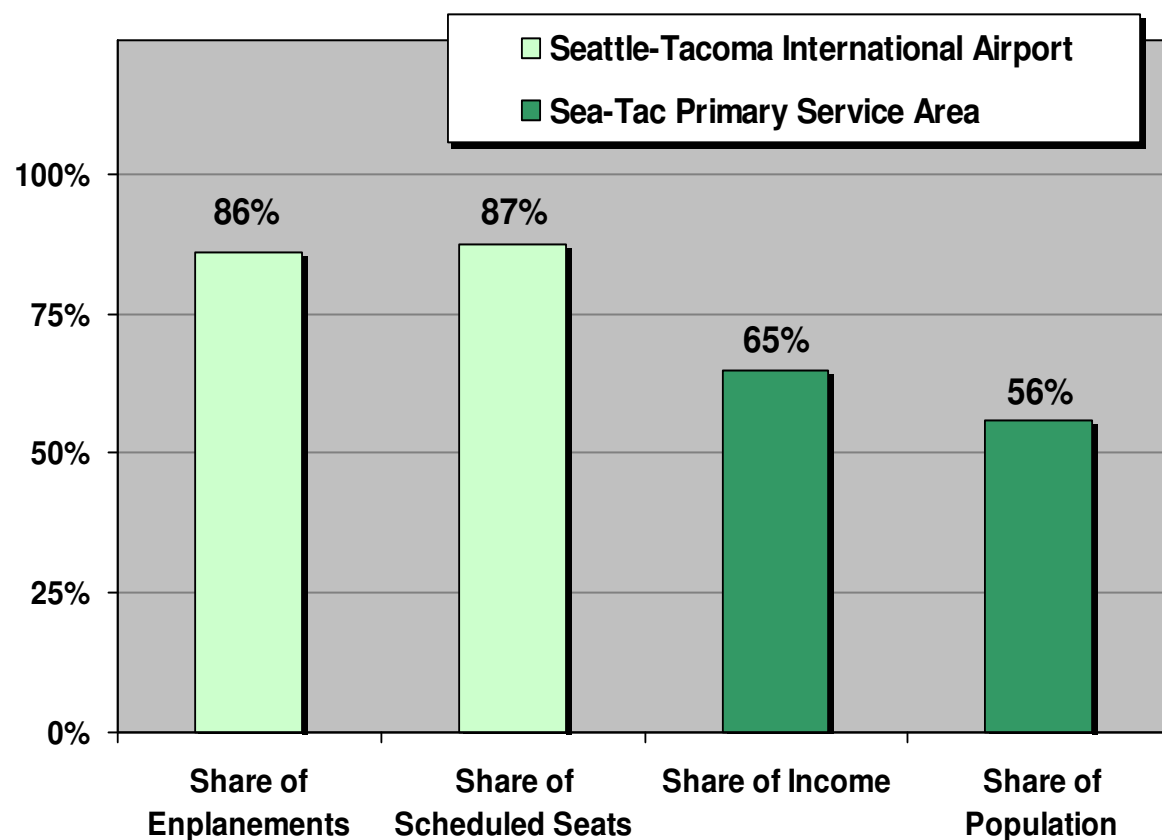
Indexed Growth in Scheduled Seat Capacity, Washington State vs. Total US  
August 1996 - August 2006 (1996 = 100)



Source: Official Airline Guide

# Nonetheless, Sea-Tac Attracts a Disproportionate Share of Washington State Passenger Traffic and Service

Sea-Tac Share of State Passenger Traffic & Service  
vs. Primary Service Area Share of Socioeconomics



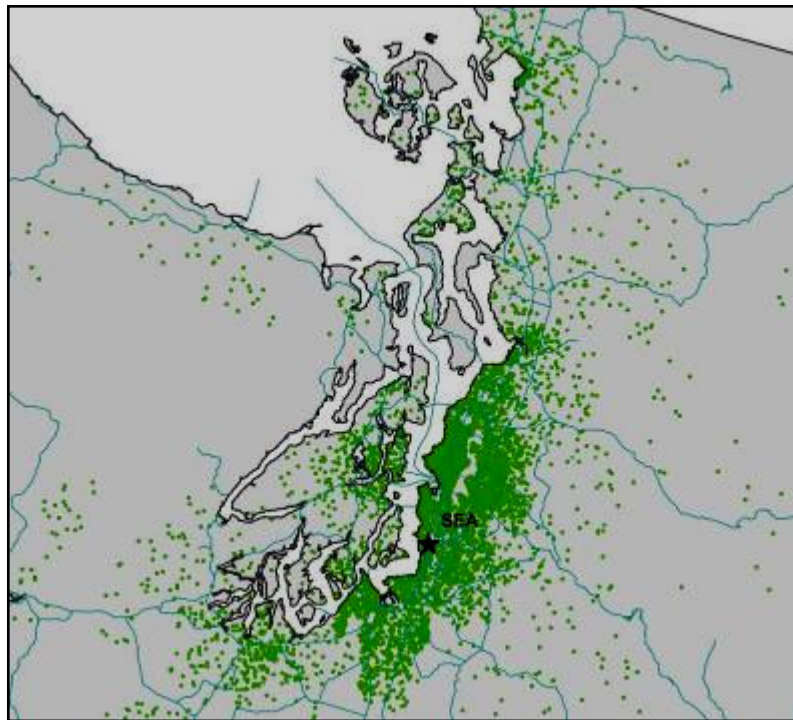
- Reflects Connecting Activity at SEA
- However, Also Implies that SEA is Capturing Local Passengers from Other Airports' Catchment Areas

Note: Sea-Tac Primary Service Area Includes King, Snohomish, Pierce, Thurston, Mason and Jefferson Counties  
Sources: FAA Terminal Area Forecasts, Official Airline Guide (August 2006), NPA Data Services

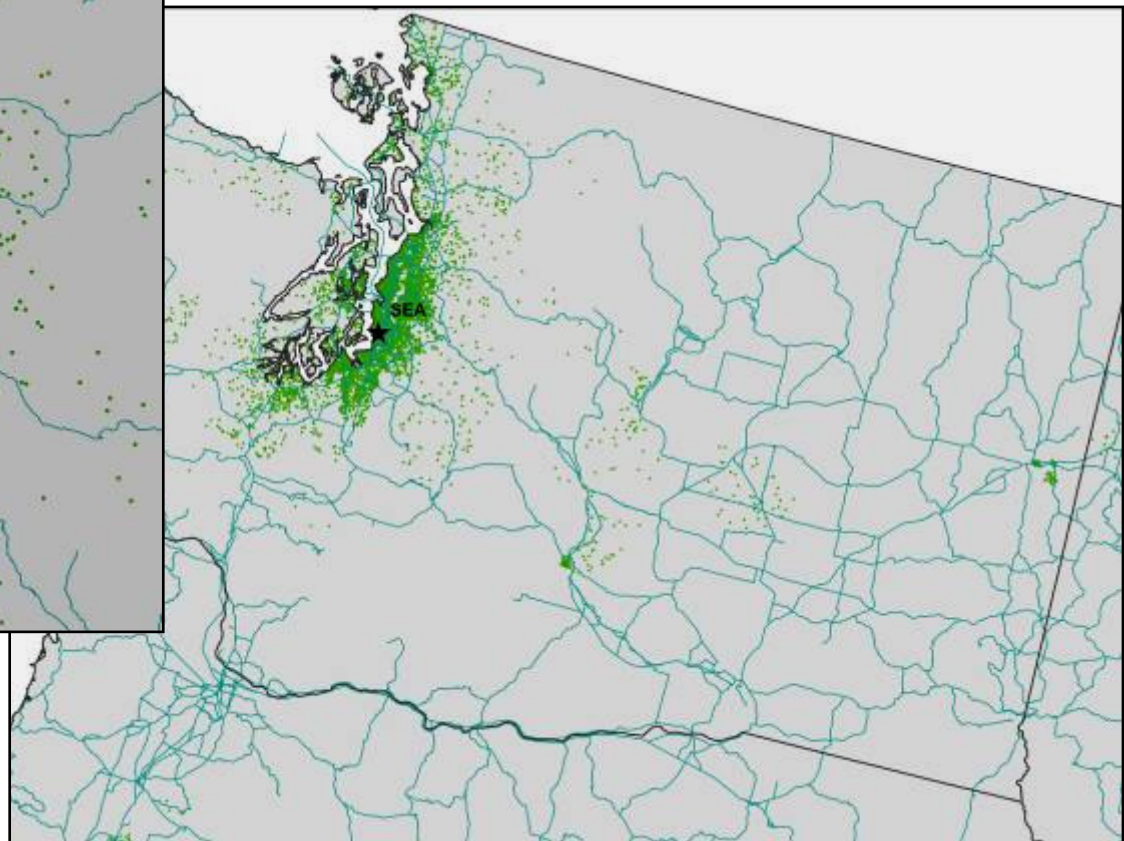
# Sea-Tac Draws Passengers from Throughout the State

## SEA-TAC Survey Passengers By Ground Origin

*One Dot Represents 1,000 Passengers*



**Puget Sound Region**



**Total State**

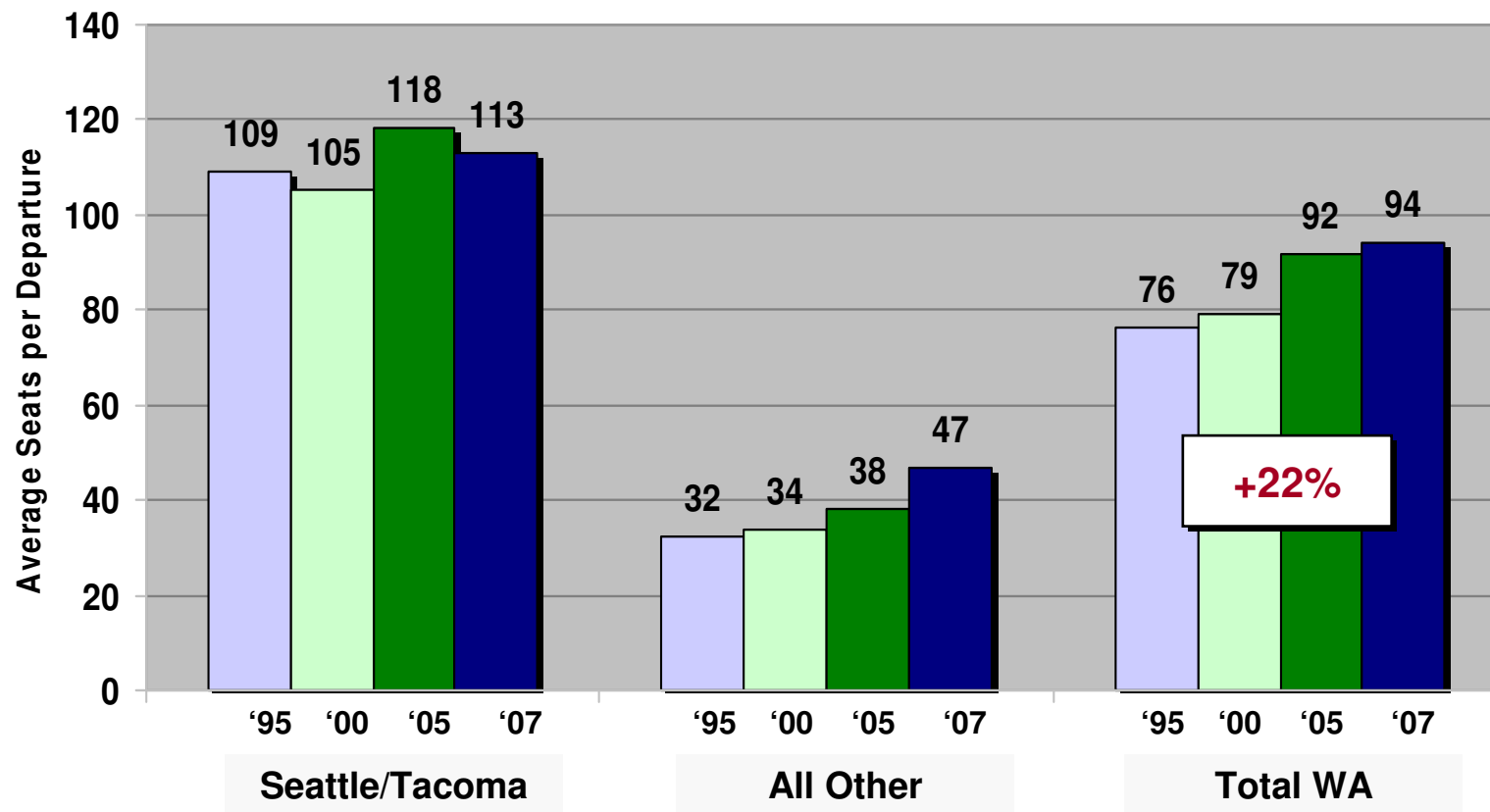
Source: SH&E analysis, ESRI, Sea-Tac passenger survey

# Average Aircraft Size at the Washington State Airports Has Increased by 22% Since 1995

*Increased Aircraft Size at Smaller Airports Has Resulted in Reduced Flight Frequency*

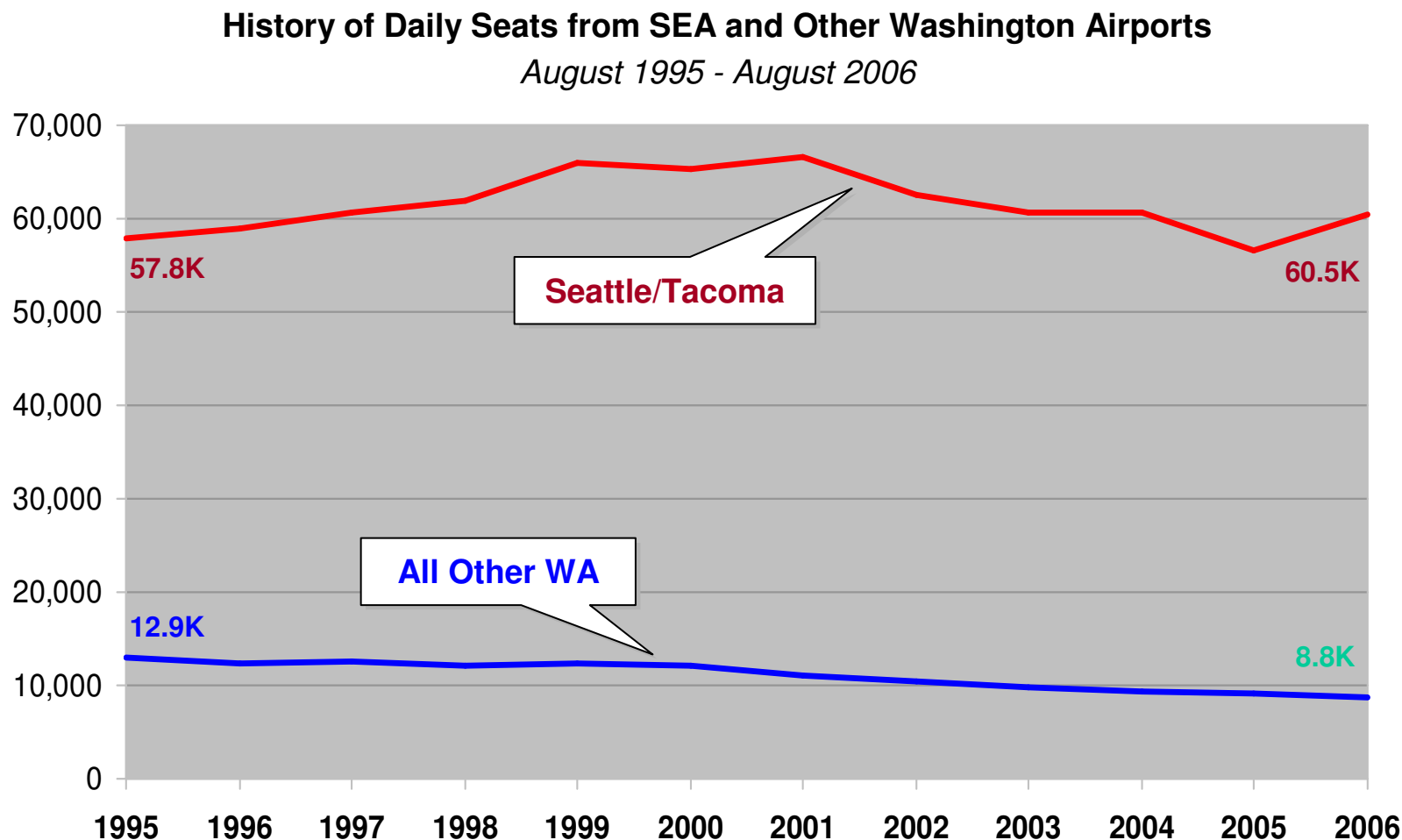
**Average Aircraft Size at Sea-Tac and Other Washington Airports**

*August 1995, August 2000, August 2005, March 2007*



Source: OAG Schedules

# Between August 1995 and August 2006, Seat Departures at Sea-Tac Increased by a Moderate 4.5%, But Fell 32% at the Other Washington State Airports



Source: OAG Schedules

# Many Smaller Commercial Service Airports in Washington Have Lost a Considerable Amount of Air Service Since 1995

## Percentage Change in Weekly Scheduled Seats August 1995 – August 2006

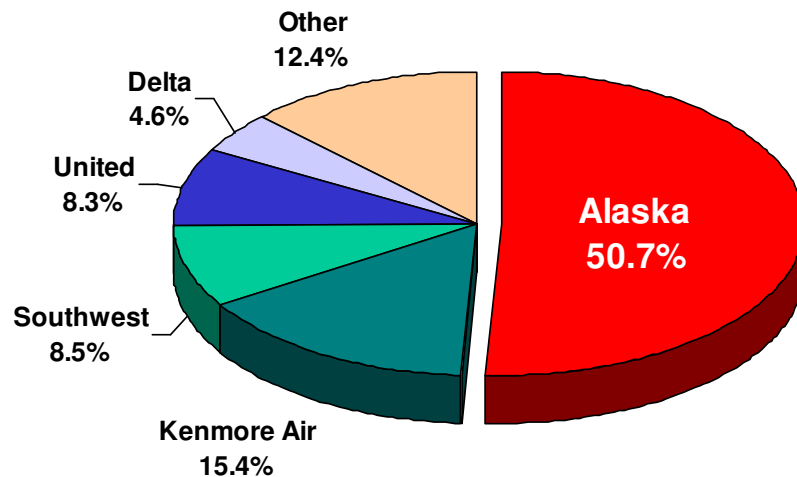
Airport	Percentage Change	Absolute Change
Seattle Boeing Field	275%	539
Roche Harbor	114%	224
Rosario	114%	224
Westsound	114%	224
Seattle/Tacoma	3%	13,515
Bellingham	-11%	-447
Walla Walla	-20%	-225
Spokane	-23%	-12,667
Pasco	-25%	-2,037
Oak Harbor	-35%	-208
Moses Lake	-54%	-396
Wenatchee	-57%	-1,362
Friday Harbor	-57%	-1,025
Yakima	-61%	-2,398
Pullman/Moscow	-68%	-2,223
Seattle Lake Union SPB	-71%	-1,120
Lopez Island	-80%	-854
Kenmore	-86%	-805
Port Angeles	-89%	-2,420
Olympia	-100%	-312
Center Island	-100%	-525
Decatur Island	-100%	-525
Blakely Island	-100%	-532
Anacortes	-100%	-707
Eastsound	-100%	-932

- Except for Sea-Tac, Boeing Field and Select San Juan Island Airports, All Others Have Lost Seats Since 1995
- 6 Airports Have Lost Service Entirely
- In Many Cases, Competing Carriers Have Exited the Market Completely, Leaving a Single Carrier – Horizon – Which Has Reduced its Own Service Frequency
  - Partly Offset by Horizon's Replacement of 19-Seat Metros With 37-Seat Dash 8's

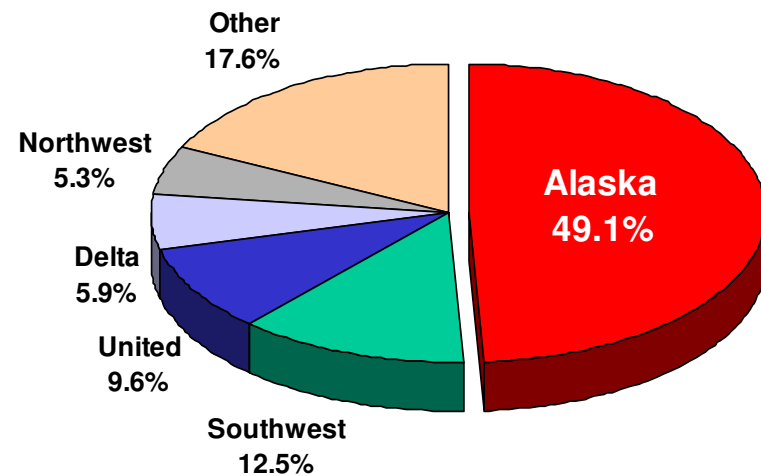
Source: Official Airline Guide

# Alaska/Horizon Provides 51% of Weekly Departures and 49% of Weekly Seats at the Washington State Airports

**Weekly Departure Share**  
*March 2007*



**Weekly Seat Share**  
*March 2007*



Source: OAG Schedules, March 2007

COMMERCIAL SERVICE AIRPORTS:  
TRAFFIC AND OPERATIONS FORECASTS

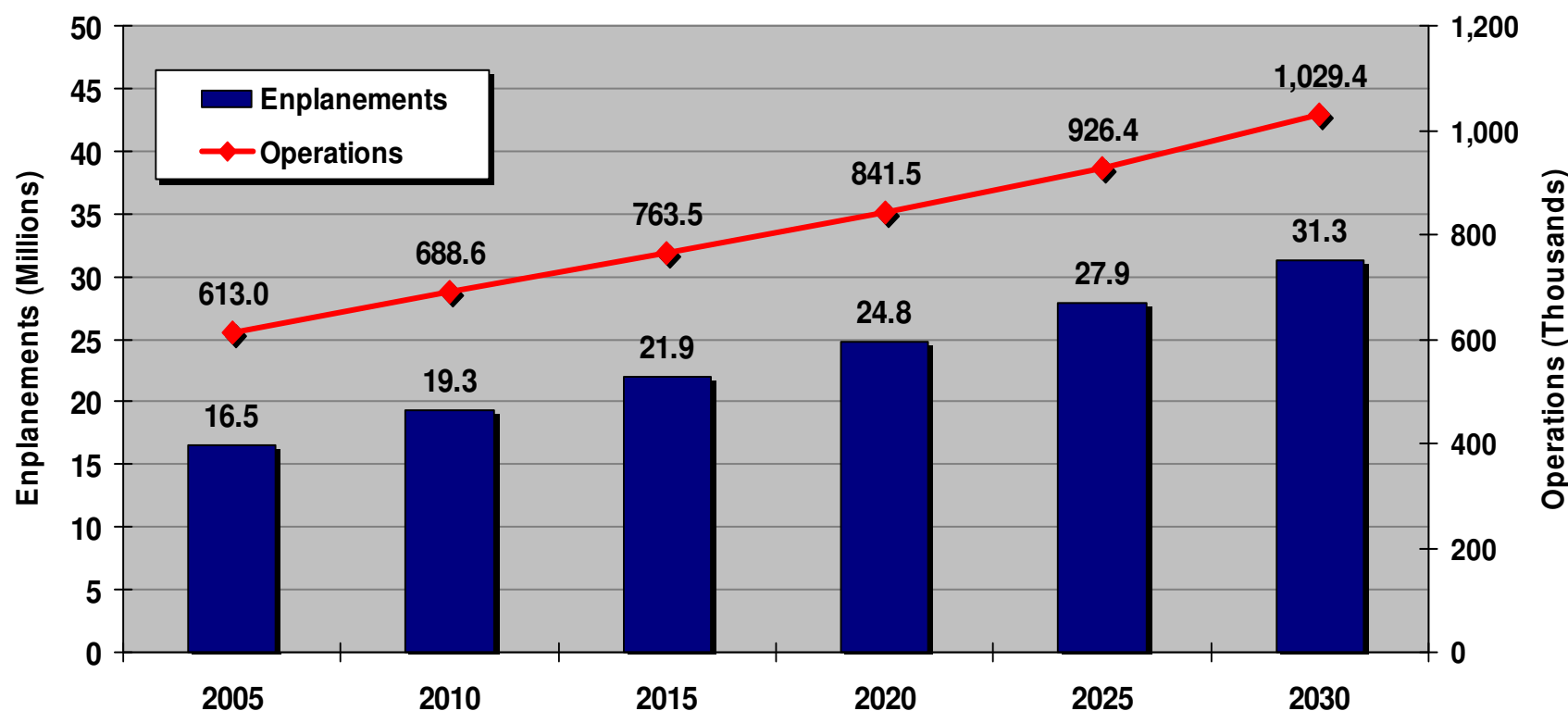


## Commercial Airport Forecast Results

# SH&E Forecasts That Enplanements at Washington Commercial Airports Will Increase by 90% (2.6% per Year) Between 2005 and 2030

***Commercial Aircraft Operations are Projected to Increase by 68% (2.1% per Year)***

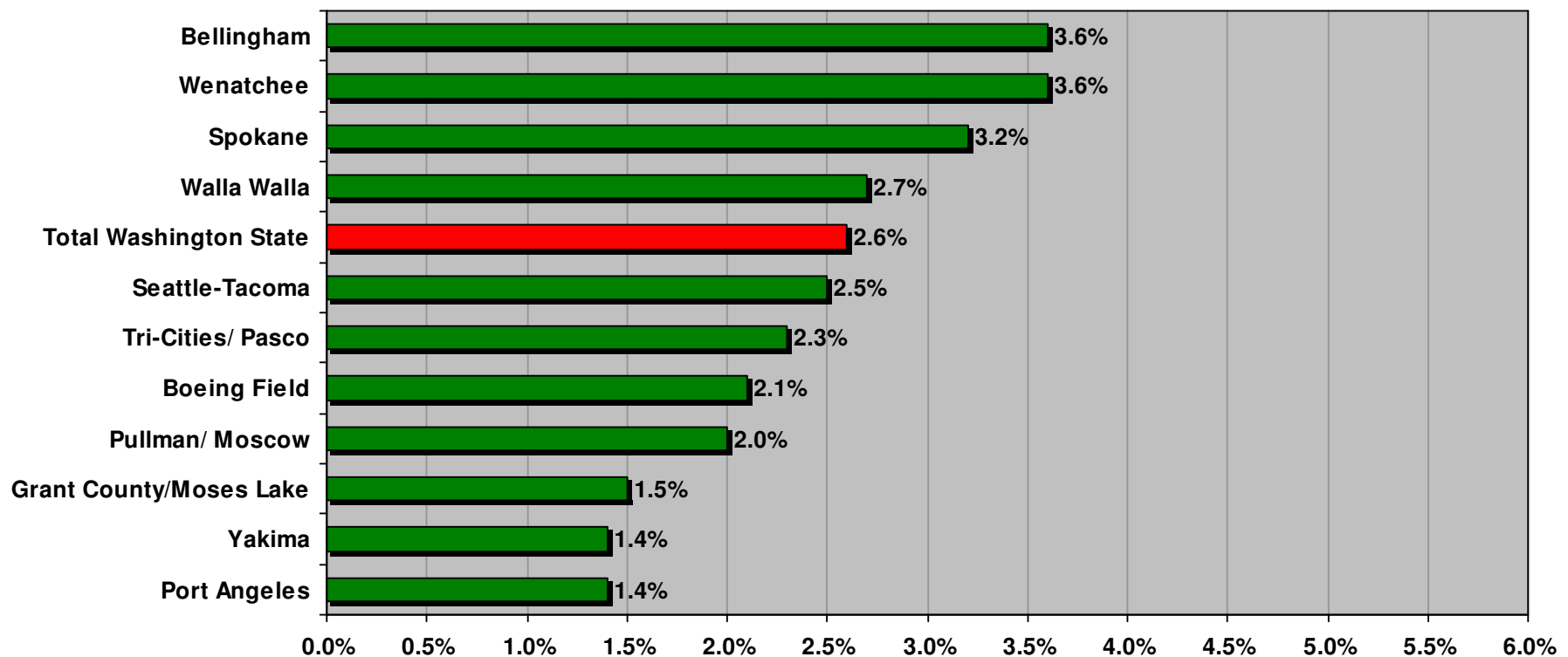
Forecast Growth in Enplanements and  
Commercial Operations at Washington Commercial Airports  
2005-2030



# SH&E Has Projected Increased Passenger Demand at Each of the Commercial Air Service Airports in Washington State

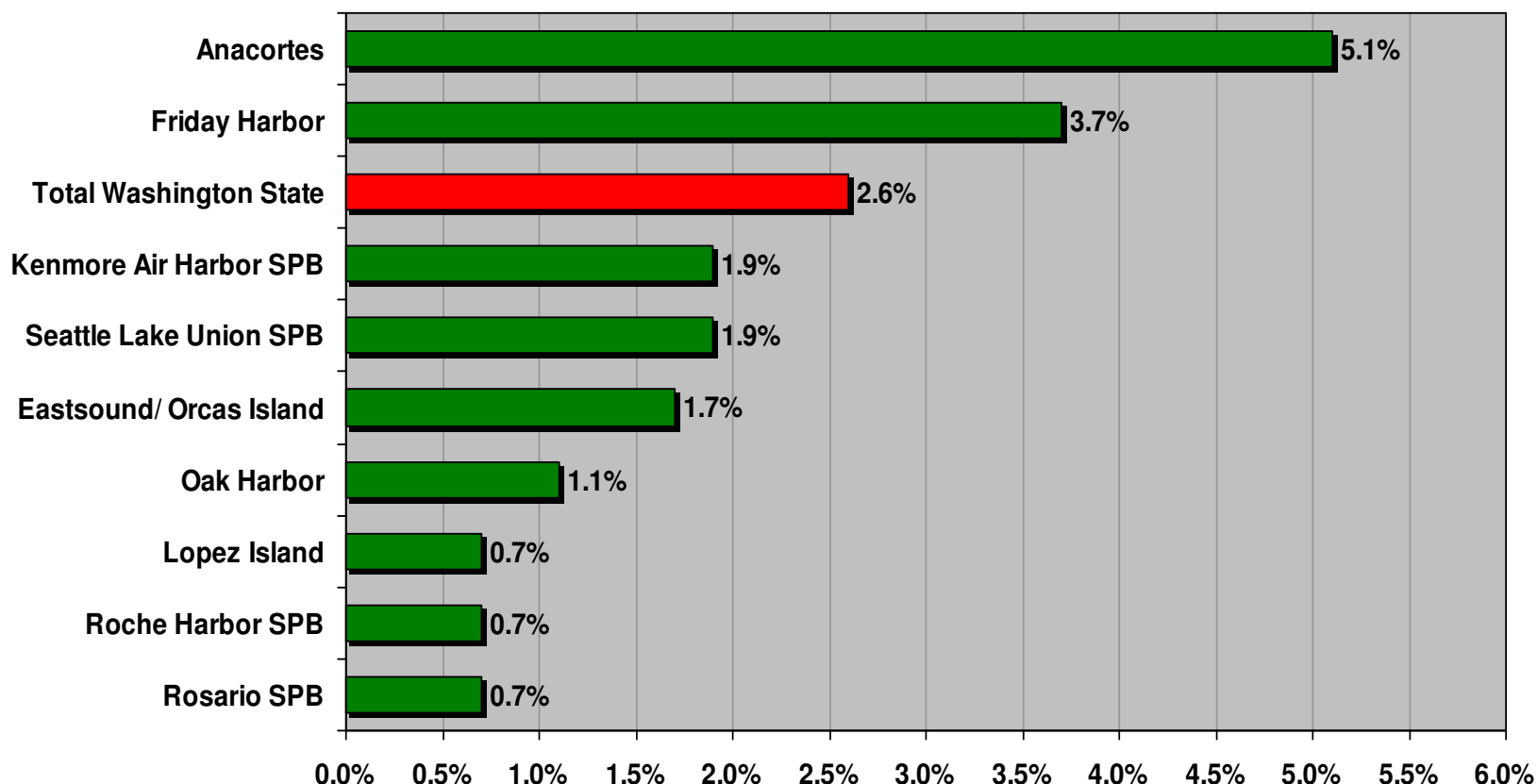
*Local Demand is Projected to Increase Over the Long Term at Each of the Airports, Despite the Risk of Service Loss at Several Airports in the Short- or Medium-Term*

Large, Medium and Small Airports (Excludes San Juan Islands ) Avg Annual Psgr Growth  
2005-2030



# SH&E Has Projected Increased Passenger Demand at Each of the Commercial Air Service Airports in Washington State, *Continued*

Seaplane Bases and Small Airports in San Juan Islands Avg. Annual Psgr Growth  
2005-2030



## Key Conclusions

- **Washington's Commercial Passenger Traffic is Highly Concentrated, With Sea-Tac Accounting for 86% of the State's Total Enplanements**
- **Passenger Traffic in Washington is Projected to Remain Concentrated at Sea-Tac and Spokane for the Foreseeable Future**
- **Sea-Tac and Spokane are the Primary Airports in the State That Attract Passenger "Leakage" from Smaller Airports**
- **A Number of Smaller Airports in Washington Have Experienced Considerable Declines in Passenger Traffic and Commercial Operations**

## Key Conclusions, *Continued*

- **Horizon (QX) May Retire its 37-Seat Dash 8-200 Turboprops in the Next Several Years**
  - If Dash 8-200's are Eliminated, QX Fleet Will Consist of Aircraft Nearly Twice the Seat Capacity.
  - It is Uncertain if Horizon Could Operate These Larger Aircraft Economically to Smaller Markets Such as Walla Walla, Pullman/Moscow or Wenatchee
- **In the Event That Horizon Elects to Withdraw Service, the US DOT's Essential Air Service Program ("EAS") Would Act to Prevent a Total Loss of Scheduled Air Service**
- **Between 2005 and 2030, Passenger Enplanements at Washington State Commercial Airports are Projected to Increase by Nearly 90% Overall (2.6% per Year)**
- **Between 2005 and 2030, Commercial Aircraft Operations at Washington State Commercial Airports are Projected to Increase by About 68% in Total (2.1% per Year)**



## *Regional Phase II Workshops*

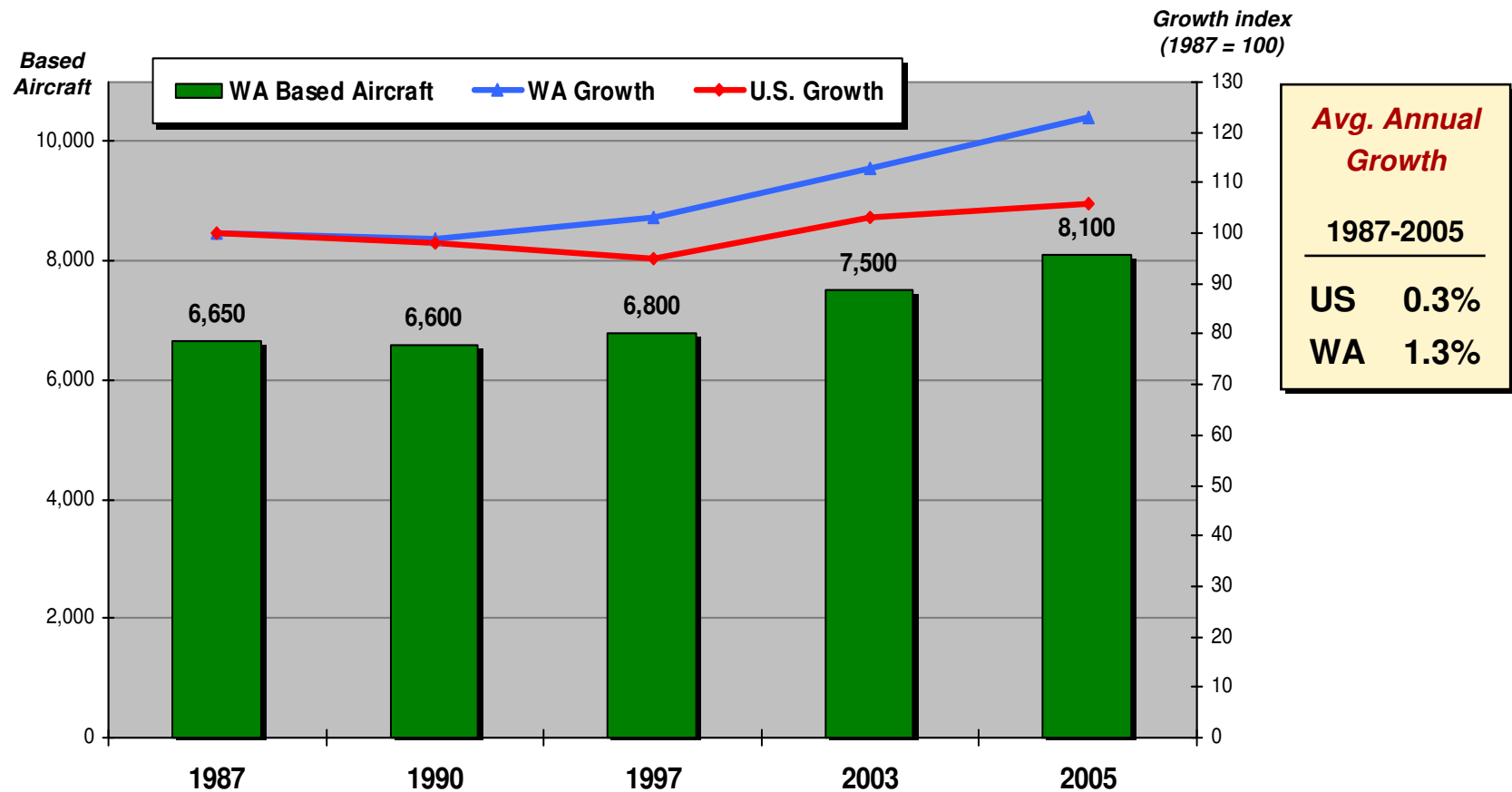
# GENERAL AVIATION ACTIVITY FORECASTS

# Significance of General Aviation to the Washington State Aviation System

- **General aviation operations represent 80 percent of 2005 total aircraft operations in Washington State**
- **The State's GA airports span a broad range of activity**
  - The number of GA based aircraft at individual Washington airports ranges from less than 5 to over 500
- **GA provides the benefits of aviation to communities not served by commercial airports**

# Over the past 18 years, growth in GA activity in Washington State has outpaced the U.S.

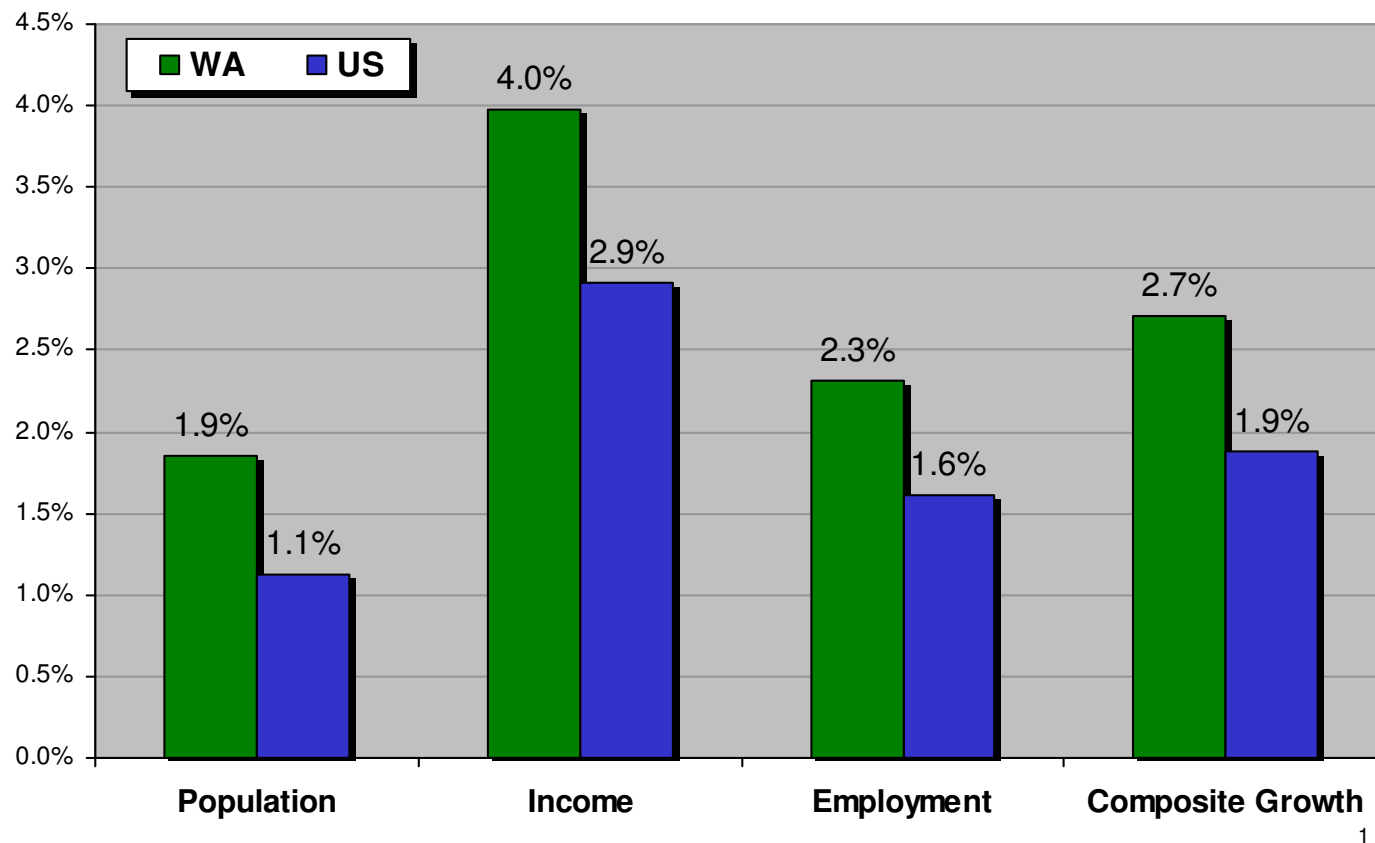
Washington State Historical Based Aircraft vs. U.S. as a Whole  
1987 - 2005



Sources: FAA 2006-2017 Aerospace Forecast, WSDOT, WA 2006 Airport Inventory Survey

# Washington State's historical socio-economic growth has also outpaced the U.S.

**Comparison of WA State and U.S Historical Socio-Economic  
Average Annual Growth  
1987 - 2005**

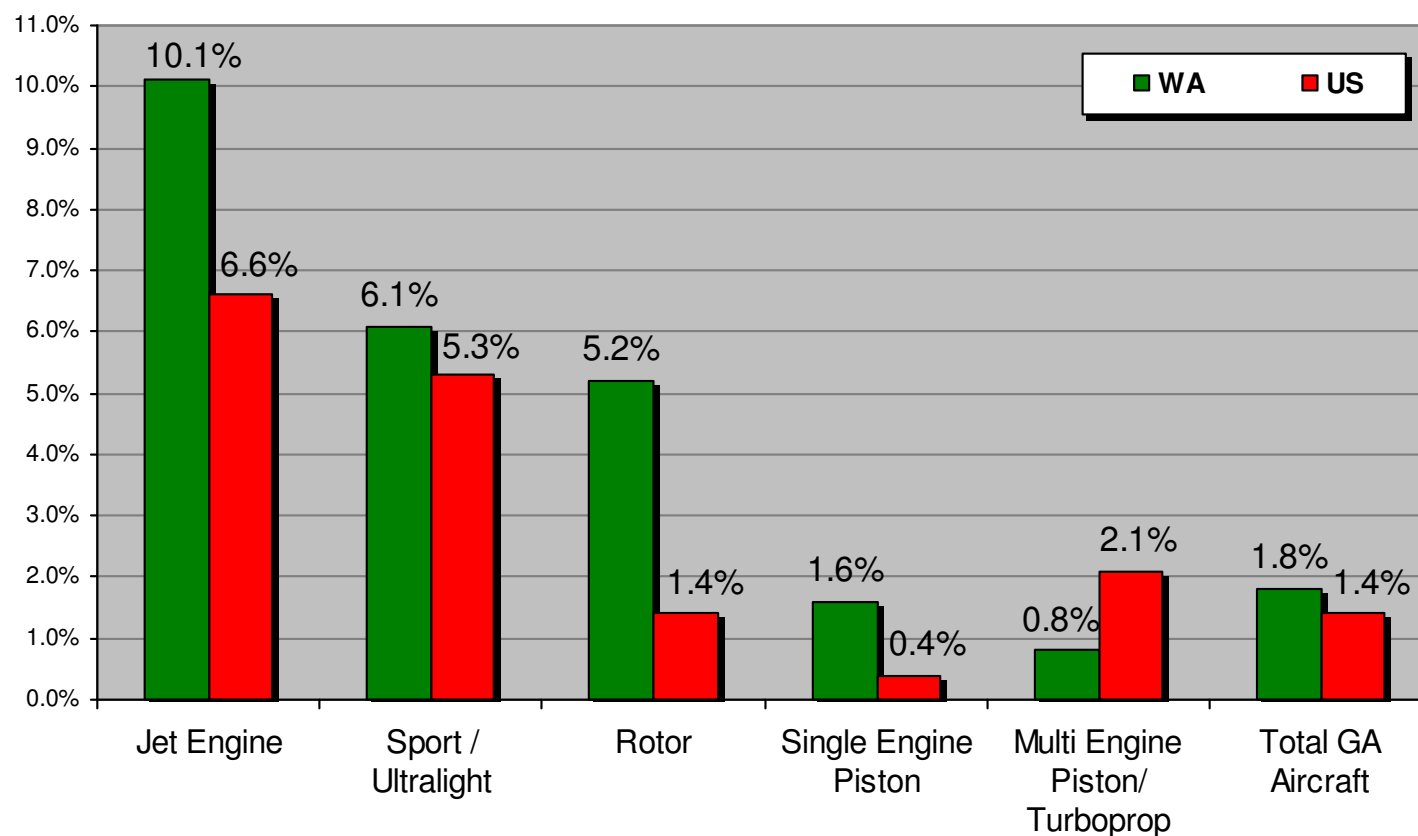


<sup>1</sup> Represents average growth rate for Population, Personal Income and Employment

Sources: U.S. Bureau of the Census, U.S. Bureau of Economic Analysis, NPA Data Services Inc.

# Jets and Sports/Ultralights have been the fastest growing GA segment, both nationally and within Washington State

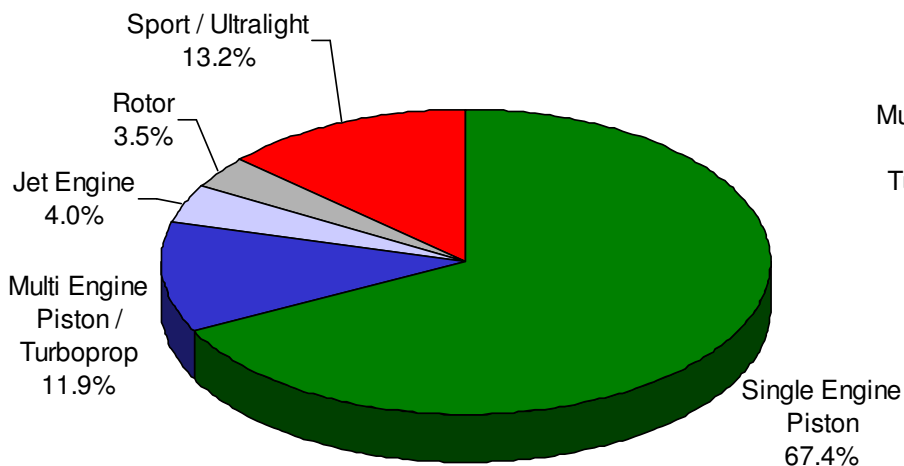
**Historical GA Fleet Growth for Washington State and the U.S. by Aircraft Type**  
*1997 - 2005*



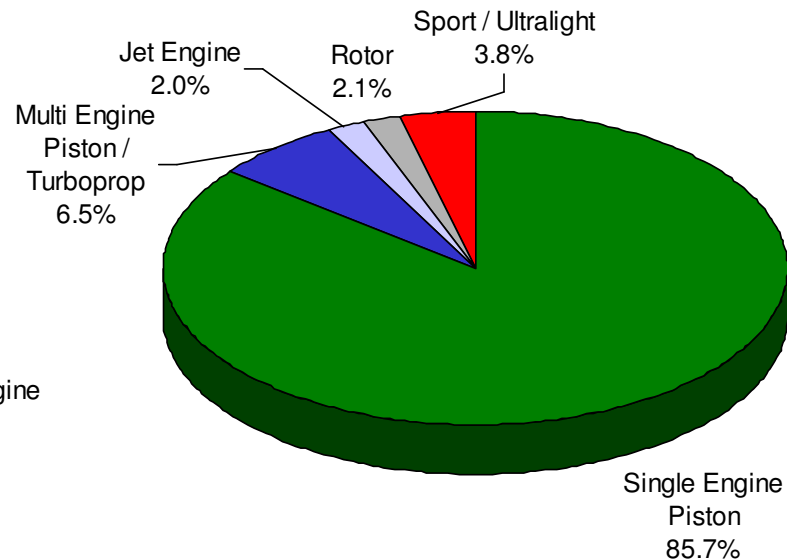
Sources: WA Airport Inventory Survey, 1997, 2006

## Nevertheless, jets still represent a low share of the total GA fleet in both Washington State and the nation

**Current National GA Fleet Mix  
2005**

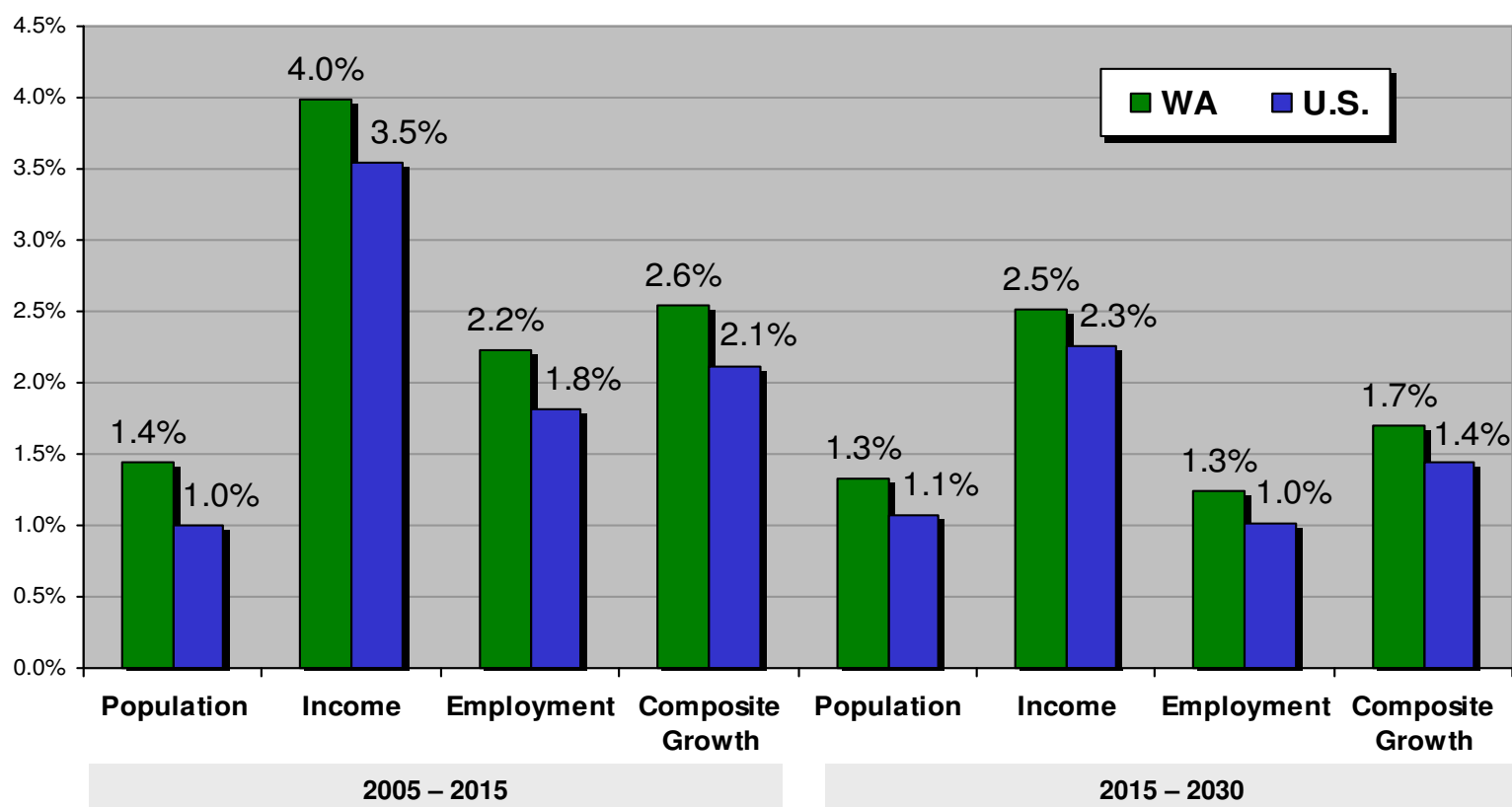


**Current Washington GA Fleet Mix  
2005**



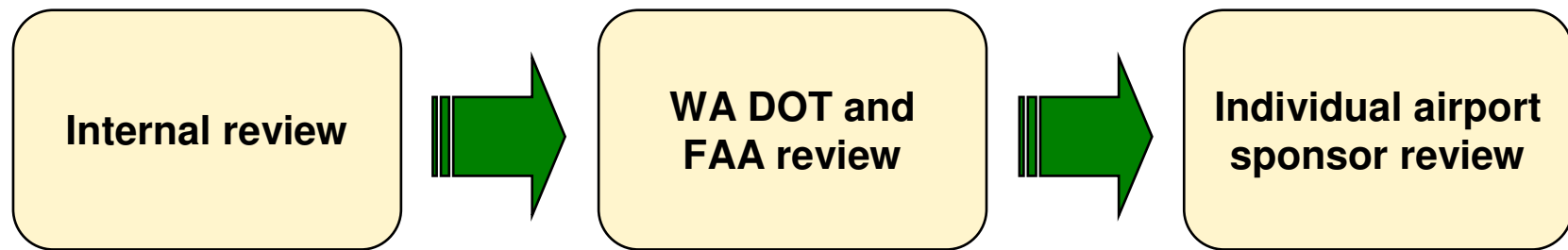
# Socio-economic growth in Washington State is forecast to continue to outpace the U.S.

Comparison of WA State and U.S Forecast Socio-Economic  
Average Annual Growth  
2005 - 2030



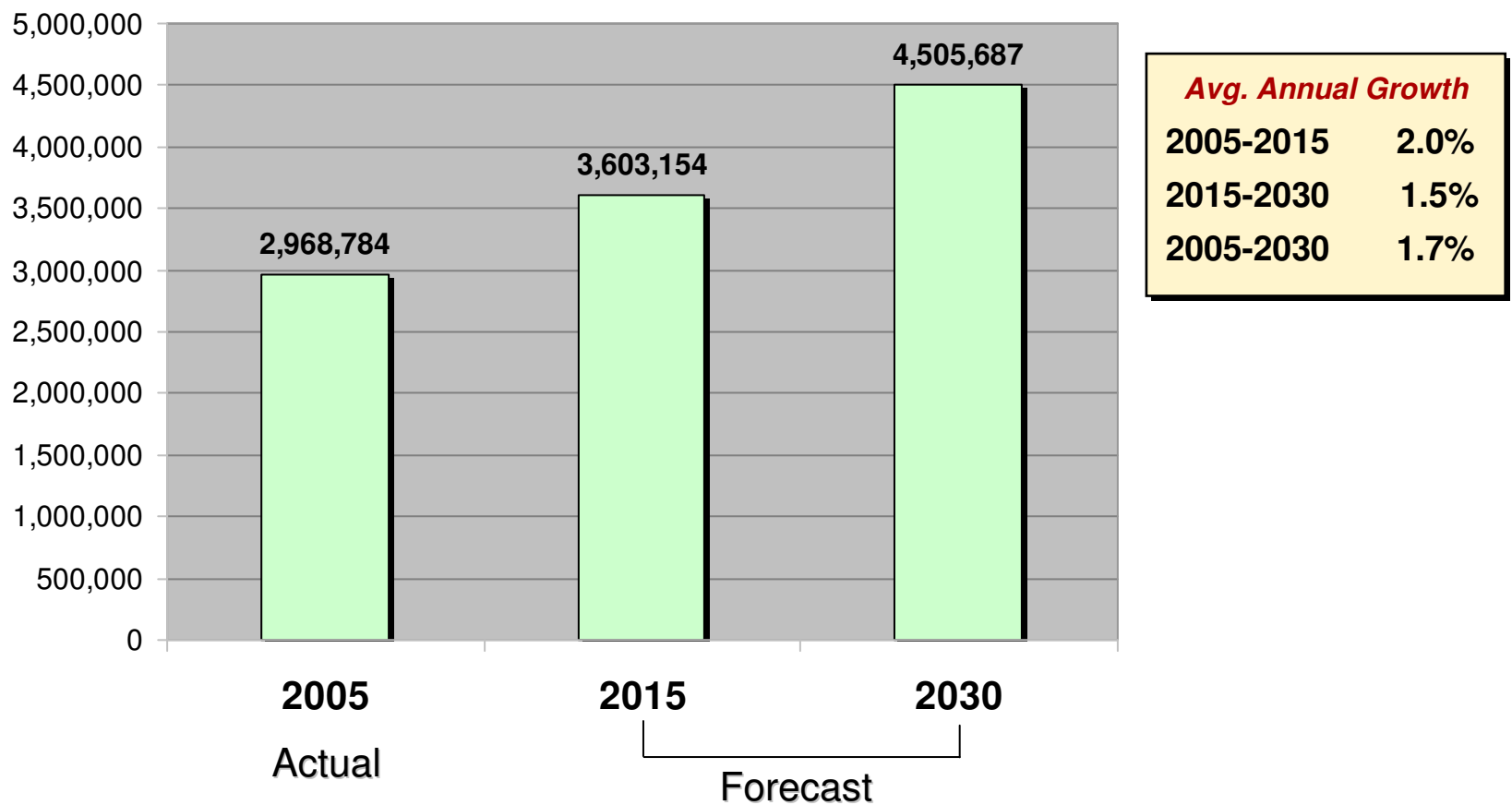
Sources: U.S. Bureau of the Census, U.S. Bureau of Economic Analysis, NPA Data Services Inc.

## The general aviation activity forecasts have undergone a three-step review process



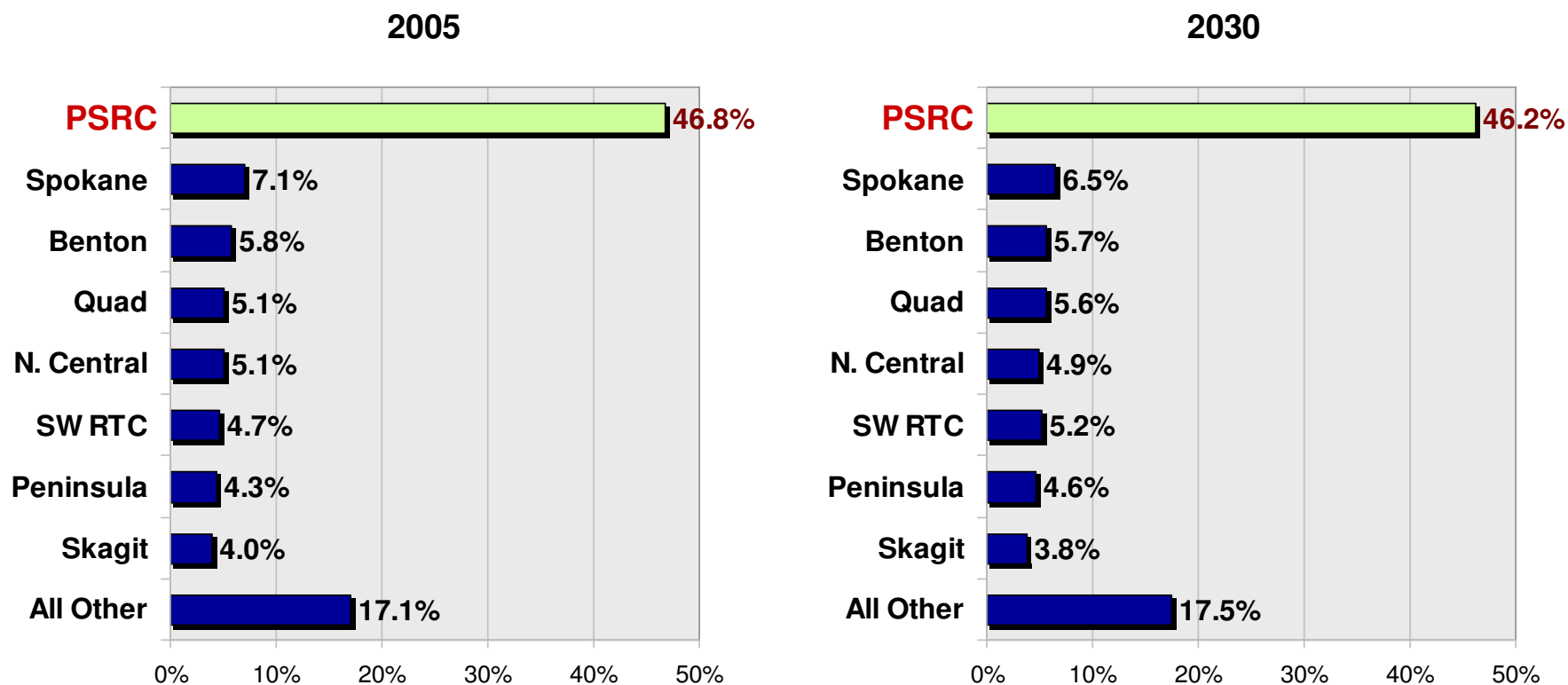
# GA operations are forecast to increase from 2.9 million to 4.5 million over the forecast period

Forecast GA Operations for Washington State  
2005 - 2030



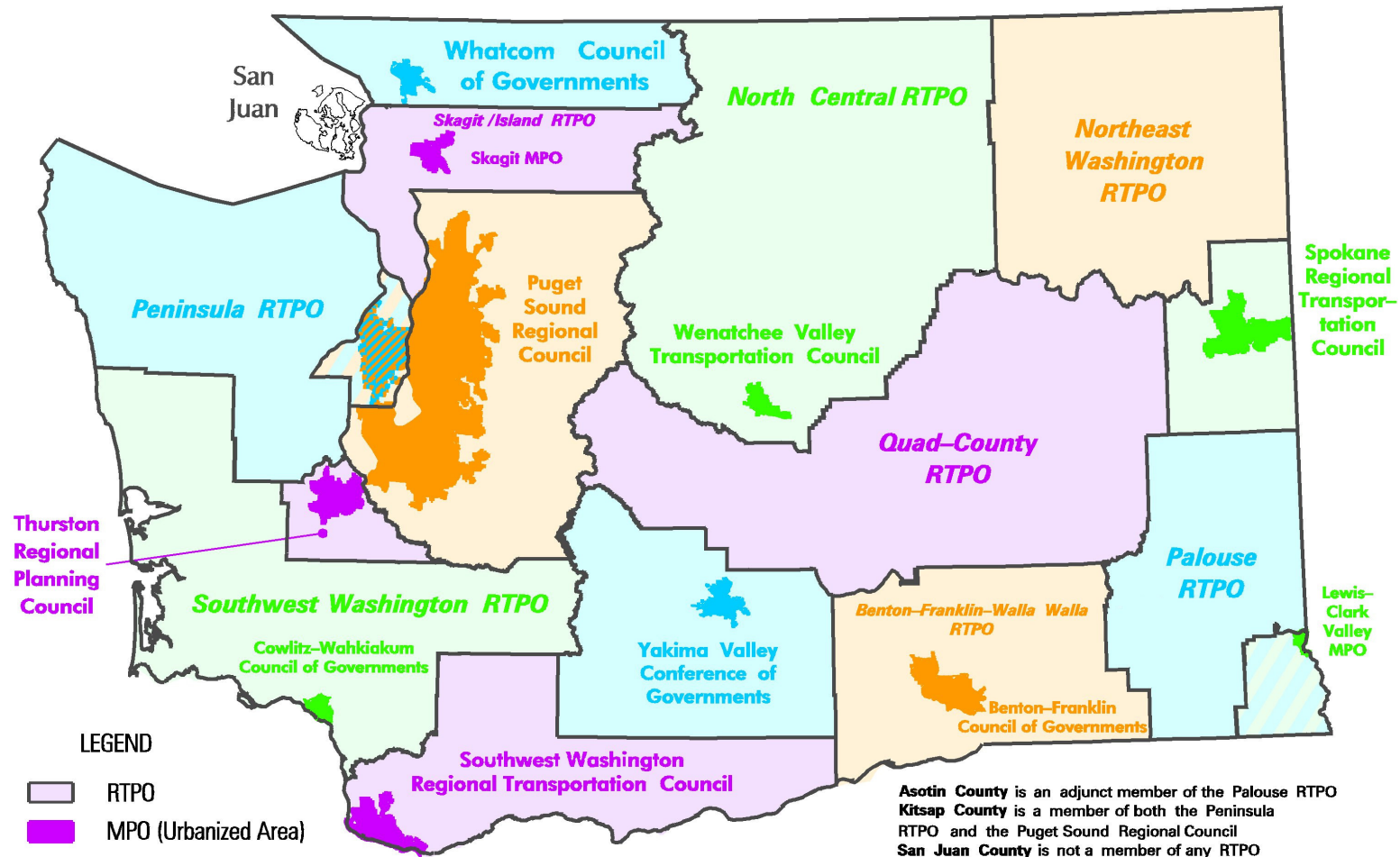
# The Puget Sound Region will continue to represent the largest share of Washington's based GA aircraft

Forecast RTPO Share of Washington State Total Based Aircraft



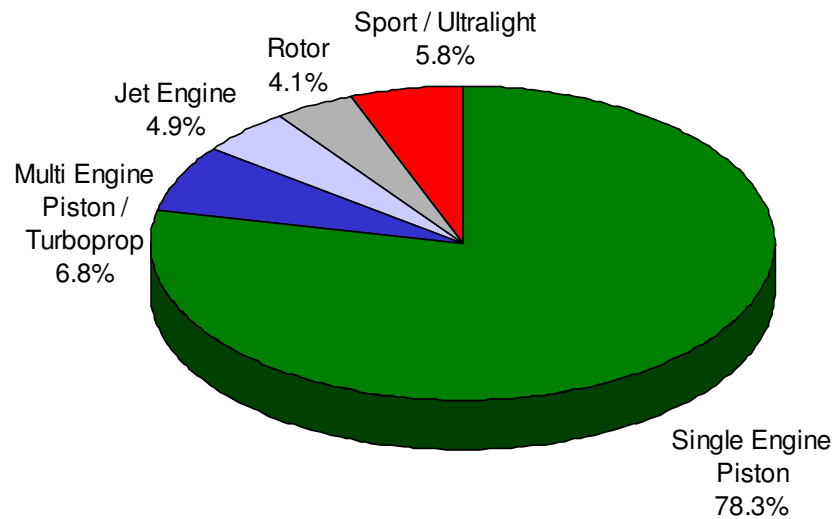
Other includes: SW RTPO, Thurston, Yakima, Whatcom, Palouse, NE Washington, and No RTPO  
– San Juan Islands

# Regional and Metropolitan Transportation Planning Organizations

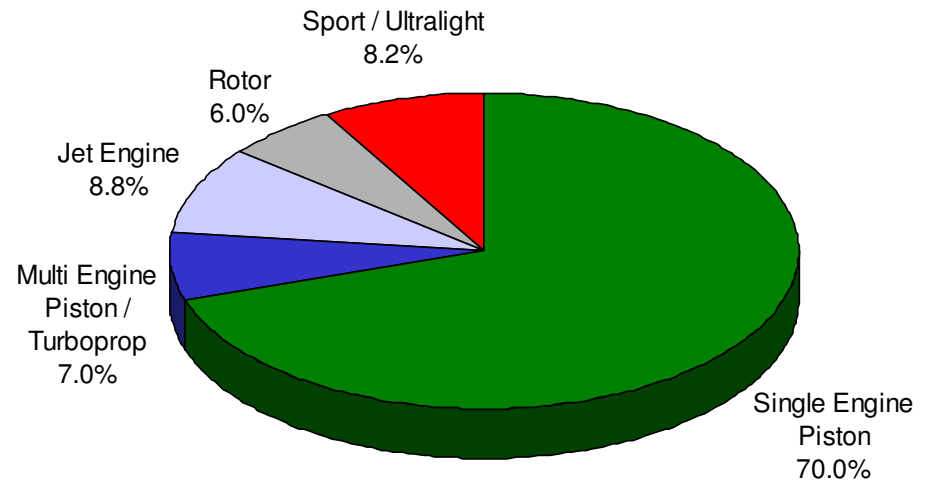


# Forecast fleet mix for Washington State

**Forecast Washington GA Fleet Mix  
2015**



**Forecast Washington GA Fleet Mix  
2030**



## Summary of Key Findings

- **Between 2005 and 2030, Washington's based general aviation aircraft are forecast to increase from 8,100 to 11,800, representing total growth of 45% (1.5% AAG)**
- **Washington GA aircraft operations will grow from 3.0 million to 4.5 million at a rate of 1.7% annually.**
- **Jets will be the fastest growing segment of GA activity in Washington, as in the nation as a whole.**
- **The Puget Sound will remain the region with the highest concentration of GA activity (46% of based aircraft in 2030)**

## Summary of Key Findings cont.

- **Other significant concentrations of GA activity in Washington include Spokane (6.5% of 2030 based aircraft), Benton-Franklin (5.7%), and Quad County (5.6%)**
- **The fastest growing regions for GA activity include Thurston (2.1% growth in based aircraft), Southwest Washington RTC (2.0%), Quad County (1.9%), Peninsula (1.8%), and Northeast Washington (1.8%)**
- **Regions with comparatively slow growth are forecast to include Palouse (0.7% growth in based aircraft), and Yakima (0.7%)**



## ***Regional Phase II Workshops***

# **AIR CARGO FORECASTS**

# Air Cargo Activity Encompasses Three Components

## ■ Air cargo activities predominantly include:

- Freight: all-freight airlines and “belly” shipments in scheduled psgr flights, Examples: Kitty Hawk, Atlas, Gemini, Kalitta, EVA Air, passenger flights.
- Express Freight: integrated express - DHL, FedEx, and UPS, principally overnight/deferred envelopes, pouches and boxes, some larger freight
- Mail: air mail carried in belly of commercial planes and as freight by FedEx under contract with USPS

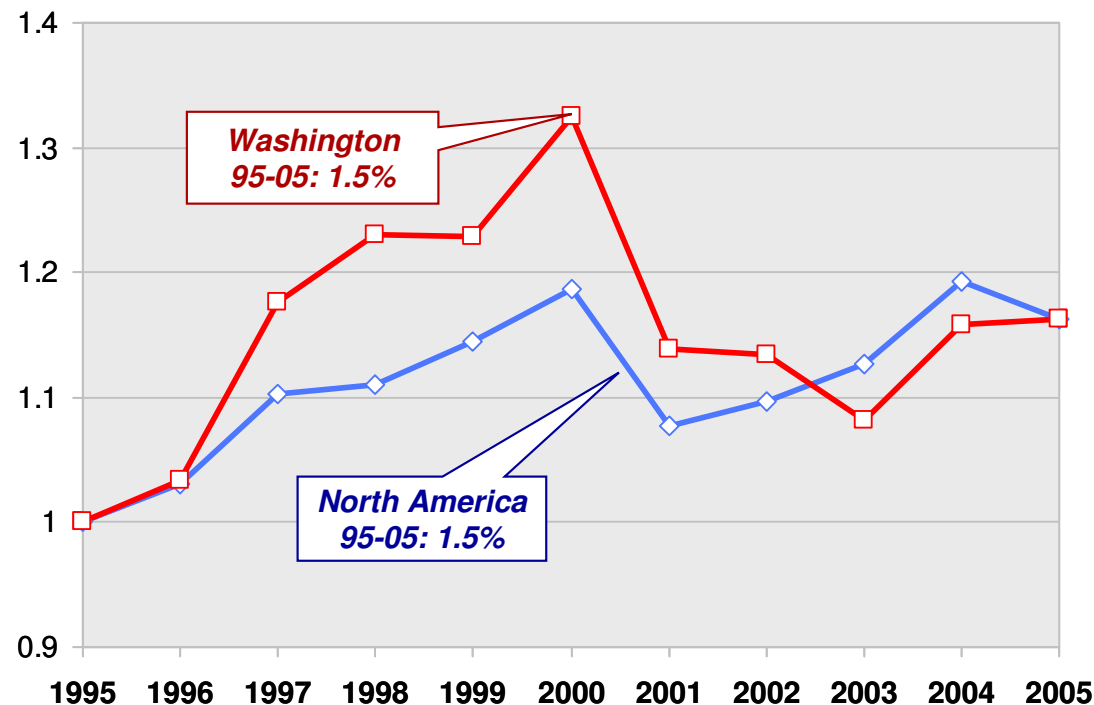
## ■ Forecasts developed included each type of “cargo”

## ■ Air cargo in WA is Performed by Four aircraft type/capacity:

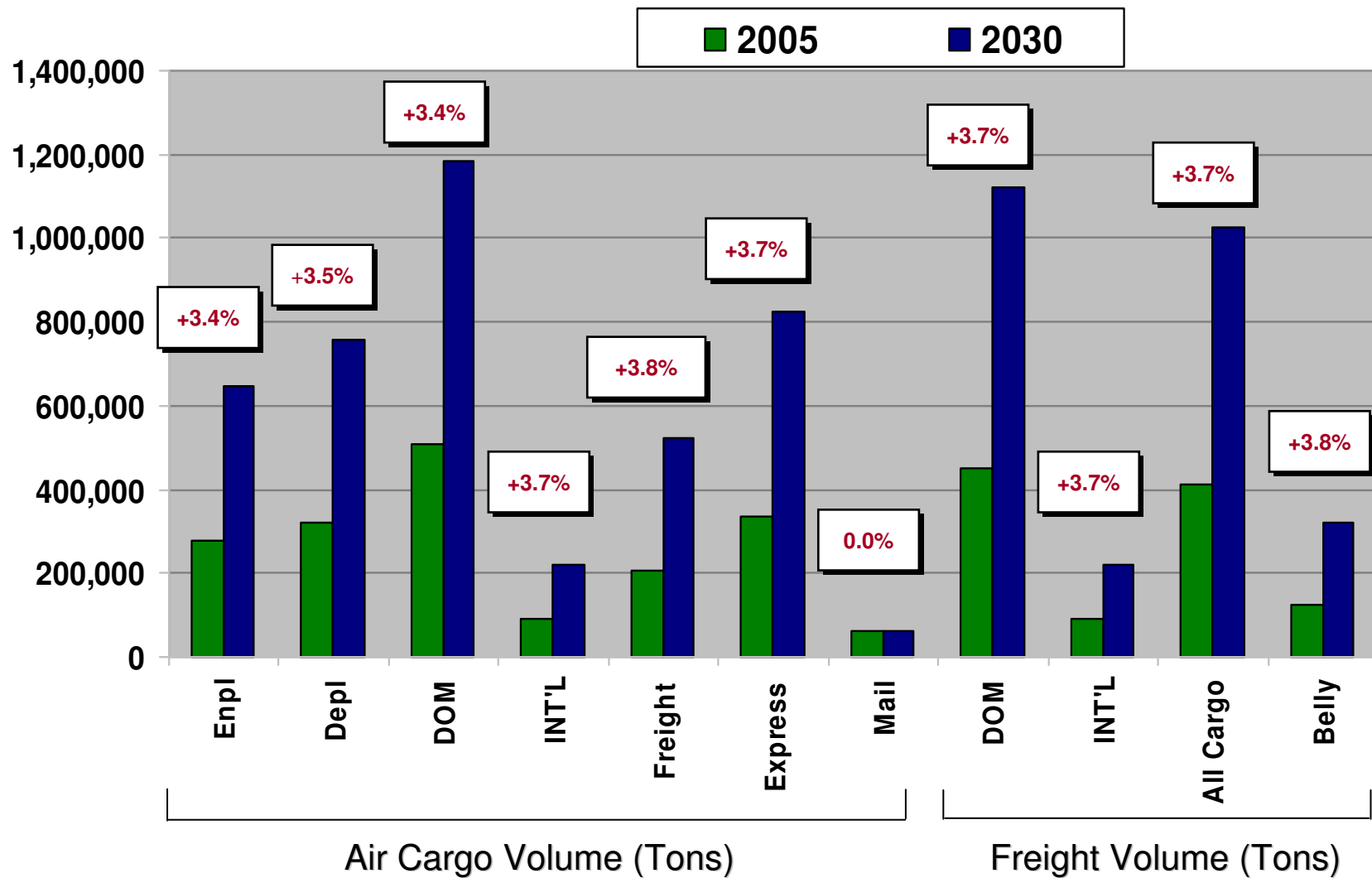
- Large widebody – 76 or more tons
- Medium widebody – 25 to 75 tons (8,600 ops in 2006)
- Narrowbody – 11 to 50 tons
- Small – up to 7 tons (36,000 ops in 2005)

# Washington's Growth Has Tracked the US Average

- Air freight in Washington and in the US overall has grown at a rate of 1.5% per year over the past ten years
- Washington's overall growth is forecast to follow the US average at 3.8% annually, based on the Boeing forecast

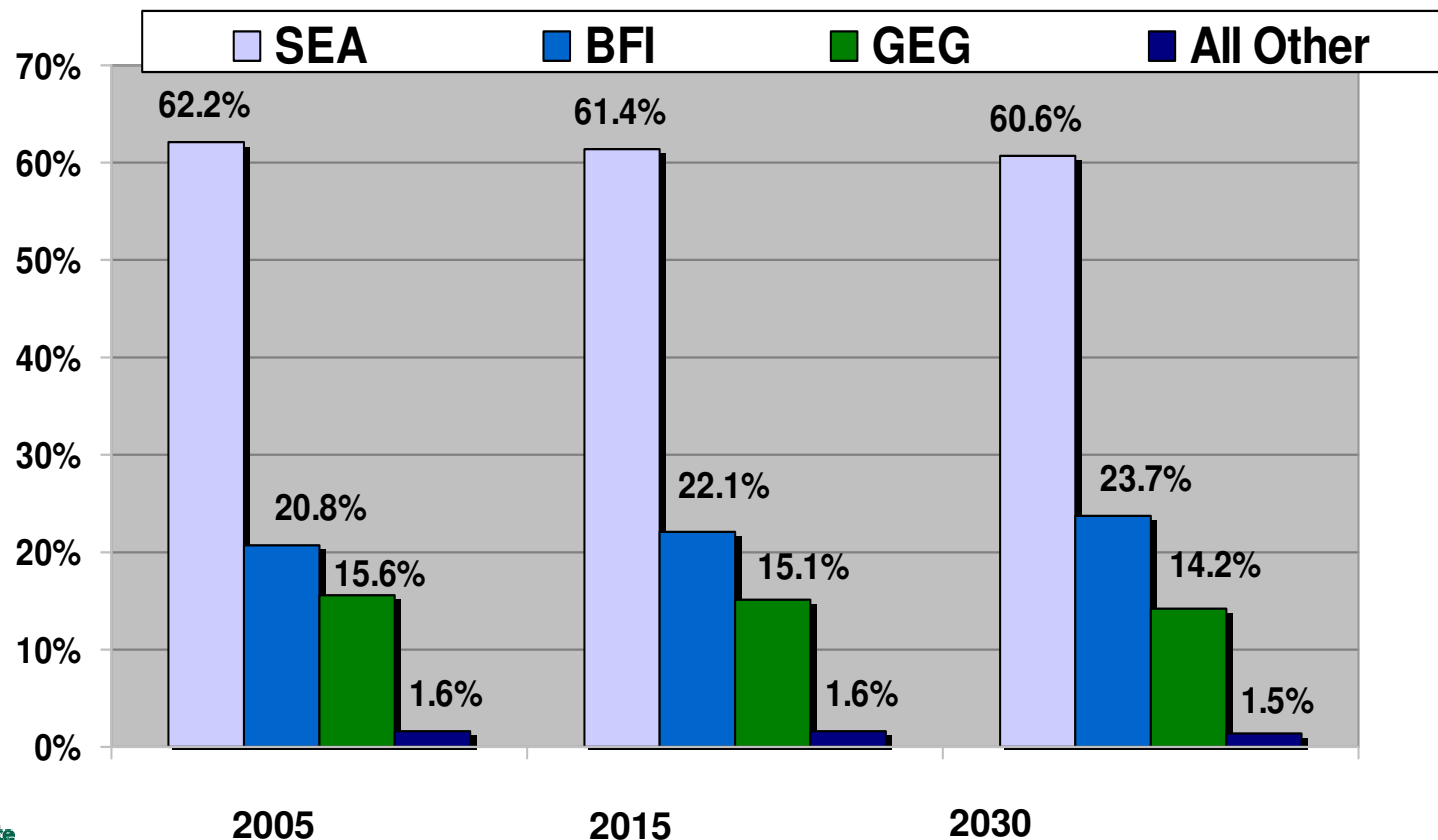


# Air Cargo Will Grow From 601,000 to 1,400,000 Tons by 2030



# Air Cargo Will Remain Concentrated in Seattle and Spokane

- Thru 2030, SEA and BFI will continue to drive the bulk of air cargo tons in Washington, at 84% in 2030 and 83% in 2005
- Spokane's share will decrease slightly from 16% to 14%



# Aircraft Operations Will Remain Concentrated in Small Aircraft

- **Operational forecasts indicate all-cargo aircraft operations will increase from 51,314 to 74,739 annually thru 2030**
  - Large widebody: from 1,056 to 2,872 annual operations
  - Medium widebody: from 8,590 to 18,099 annual operations
  - Narrowbody: from 5,967 to 9,388 annual operations
  - Small: from 35,701 to 44,380 annual operations
- **The Largest Increase will be in Medium widebodies (9,500), the Greatest Share Remains with Small Planes (60%)**
  - Medium Wide body – MD11, L10, B767, A300



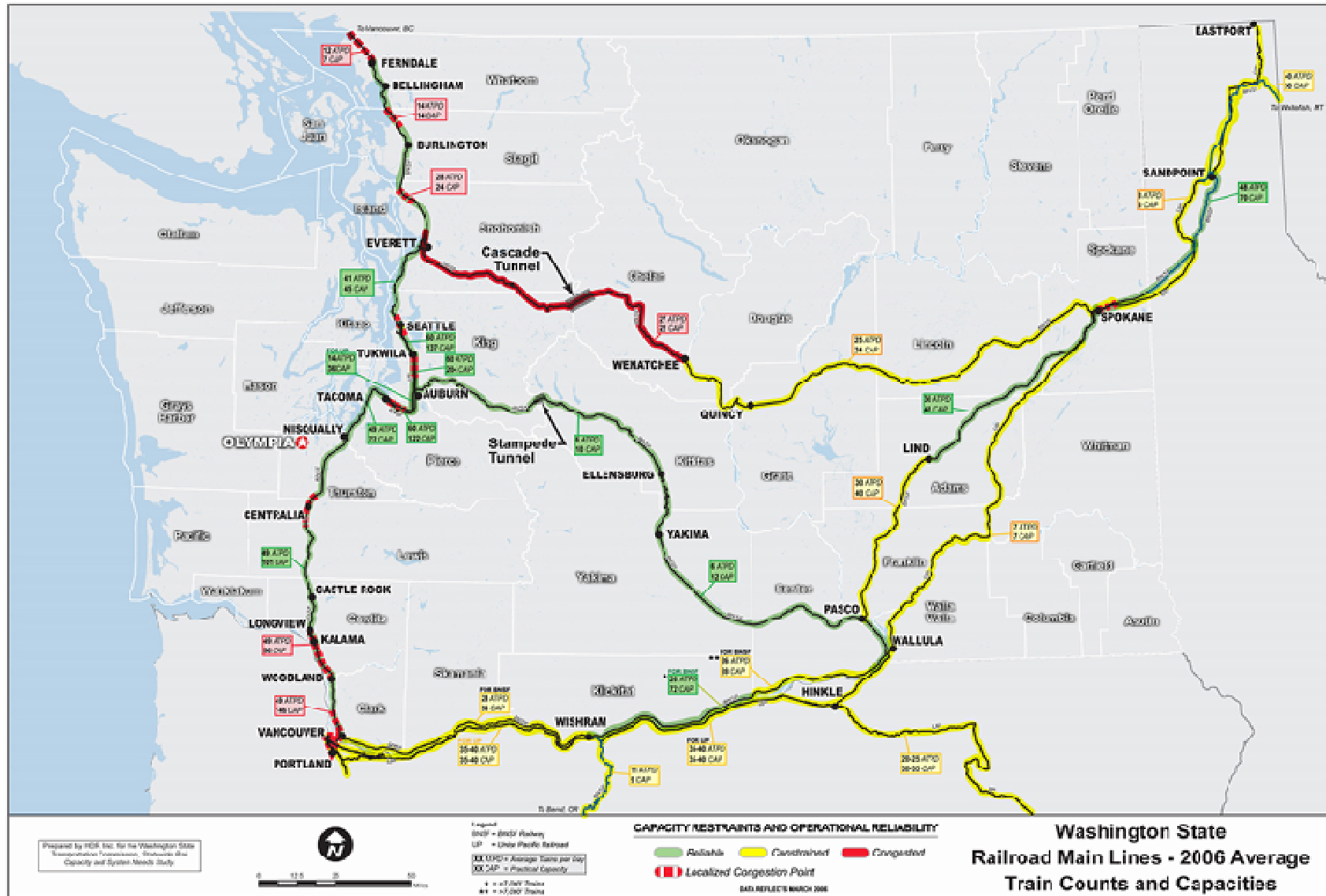
## *Regional Phase II Workshops*

# HIGH SPEED PASSENGER RAIL

# High-Speed Ground Passenger Transportation Facilities and Services

- **Can high-speed ground passenger transportation development/investment help Washington's aviation system?**
  - Can it be a viable alternative to flying for some city pairs?
  - Can it provide improved airport access and connectivity?
- **Two analyses**
  - Feasibility assessment of high-speed ground transportation development opportunities
  - Demand estimates for feasible high-speed ground transportation links

# Washington State Rail Line Capacity

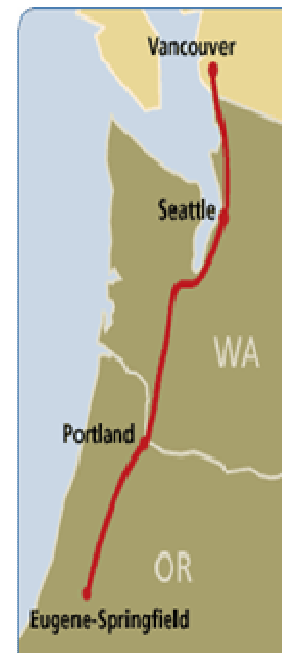


# Washington State Intercity Rail Service

## Amtrak Empire Builder



## Amtrak Cascades



## Amtrak Coast Starlight



# Conclusions – High Speed Rail

- **WSDOT's Plan to further develop the Amtrak Cascades line are achievable and may provide complementary and connecting service to congested air passenger transportation system**
- **However, the Planned High Speed Rail Service will Not Provide Meaningful Relief to SEA-TAC**
  - Local Demand to Portland and Vancouver, BC does not represent significant share of overall SEA O&D traffic
  - Even with Planned Improvement to Portland and Vancouver, BC, Rail Travel Times will Not Effectively Compete with the Automobile
- **The one other corridor where rail service implementation may become feasible is between Seattle and the Tri-Cities, and reasonable potential ridership would be expected**

# Discussion

- **What are the key issues/implications for local communities, given the findings from Phases I and II?**
- **What are the implications for long-term state aviation planning?**
- **Do you have suggestions as we continue to complete the Phase II technical study?**
- **Suggestions/Feedback for Phase III Outreach?**



## ***Regional Phase II Workshops***

## **NEXT STEPS**

# LATS Phase II Next Steps

- **Future Airport Capacity Estimates**
- **Compare Future Demand and Capacity, Identify Shortfall in Airport System**
- **Develop Scenario's to Meet Shortfall in Airport System**
- **Final Report by July**

# Governor's Planning Council: Purpose

- **Use Phases I and II findings to:**

- Recommend how to best meet statewide commercial and GA capacity needs.
- Determine which regions need improvement regarding matching of existing/projected airport facilities and the long range capacity needs of airports within the region expected to reach capacity before the year 2030.
- Recommend placement of future commercial and general aviation airport facilities designed to meet the need for improved aviation planning in the region.

- **Include public input in making final recommendations.**

- **Submit recommendations to appropriate legislative standing committees, the Governor, the Transportation Commission, and applicable regional transportation planning organizations.**

# Governor's Planning Council: Composition

- **Member of the Transportation Commission**
- **WSDOT Aviation Director**
- **Director of Community Trade and Economic Development (CTED)**
- **Federal Aviation Administration (FAA) technical expert**
- **Commercial airport operator**
- **Member of the Growth Management Act (GMA) hearings board**
- **Washington Airport Management Association (WAMA)**
- **Airline representative**
- **Two members of the general public**

# Proposed Timeline

## ■ May 2007

- WSDOT recruitment of council members.

## ■ June 2007

- Submit final recommendations for Governor's consideration by the end of the month.
  - *Must include 2 to 4 members from each group (includes alternates).*

## ■ July 1 2009

- Final Report and recommendations due to: legislature, governor, Transportation Commission and regional transportation planning organizations.